J.R.

INDEX

THE ENGINEERING AND MINING JOURNAL

VOLUME LXXXVII.

JANUARY TO JUNE

1909

HILL PUBLISHING COMPANY,
505 Pearl Street, NEW YORK

THE ENGINEERING AND MINING JOURNAL

VOLUME LXXXVII, JANUARY TO JUNE, 1909

Illustrated Articles are Designated by an Asterisk (*). Names of Books are indicated by a dagger (†).

A

PAGE

A. K. R. Gold Mg. Co. 182, 1305
Abbadia San Salvatore mine. 1242
Abbontikoon, Block 1. 196, 427
Abbontikoon Mines, Ltd. 1061
Abbott, Frederick A. 1298
Abbott, R. R. Microstructure of copper. *1040
Abel, Sir Frederick. 1085, 1087
Abosso mine, West Af. 196, 427, 905
Abrasive, Prices in 1908. 82
Acadia Coal Co. 333
Accident fund—Coal-mining tax. 220
Accident, South African colliery. 446
Accidents and Geol. Survey. 29, 81, 196, 212, 446, 558, 762, 823, 951
Accidents, Coal-mining, in 1908. 83
Accidents, Colliery—Various countries. 90
Accidents, Colliery, Views on. 12
Accidents, Economy as related to. 359
Accidents, European—Safety lamps, etc. 220
Accidents, Illinois. 87
Accidents in coal mines in 1908. 196
Accidents in metal mines, Prevention. *298
Accidents, Indiana. 88
Accidents, Ky., Coal-mining. 1250
Accidents, Mine, Prevention of. 1249, 175, 1198
Accidents, Montana. 179
Accidents, New Mexico. 88, 89
Accidents, Pennsylvania. 12, 90, 359
Accidents, Transvaal mines. 562
Accidents, United Kingdom. 90, 367, 965, 1017, 994, *1084
Accidents, West Va. 12
Acetylene lamps for miners. 272
Acetylene lamps underground. 177
Acheson, Edward G. 472
Adair-Usher process in Pachuca. 317
Adams, Arthur K. 1300
Adams, Cuyler. 721
Adams, Frank D. 572
Adams, G. I. Submarine petroleum. 814
Adams, Huntingdon. 913
Addicks, F. P. 1252
Addison's Flat, N. Z., alluvial working. *198
Adieu-Vat mines, French Guiana. 671
Adirondack graphite industry. 99
Adkinson, Henry M. 225, 572
Adventure Co., Mich. *62, 525, 918, 1157
Advice, Expert. 173
Aërolite, Nev., in 1908. 121
Affelder, W. L. Coke-drawing machinery. 510
Africa. See "West," "South," "Transvaal," "Rhodesia," "Rand," "Guinea," "Katanga," "Congo," "Algeria," "Tunis," etc.
Agates, Brazilian mining. 1235
Agitation, Cyanide lixiviation by. *695
Agitation tanks, Continuous, El Oro. *683
Agitator-filter, Hendryx. *842
Aguacate mines, Costa Rica. 1022
Ahlers, F. O. Manganese, India. 955
Ahmeek, Mich. *60, 279, 477, 1007, 1020, 1157
Aika colliery explosion, Hungary. 320
Ain Arco Co., Algeria. 623
Air, Compressed, cutting machine. *1237
Air, Compressed, Raising liquids by—Westinghouse outfit. *646
Air compressors, Buying—Note. 322, 1096
Air compressor, Hydraulic, Blakney. *841
Air compressors, Moderate-volume, centrifugal, General Elec. 453
Air compressors, Turbo, Freytag on. 698
Air drying. See also "Dry blast."
Air drying for blast furnaces—New patent. *1242
Air economy in rock drills. *895
Air locomotives, Coupled. 367
Air testing, Practical methods. 15
Air vs. electricity for coal cutters. 649, 1042
Ajax-Uinta Gold Mg. Co. 718
Alabama, Coal and Coke. 86, 91, 162, 629, 677
Alabama Consol. C. & I. Co. 624
Alabama, Gold, in 1908. 53
Alabama, Iron, in 1908. 189, 321
Alabama iron market in 1908. 77
Alamos and Arteaga districts, Mining. *699, 963
Alaska Cop. & Coal Co. 964
Alaska, Copper, in 1908. 56, *100, 907
Alaska copper—Maps. *101, *102
Alaska—Geol. Surv. work in 1908. 211
Alaska, Gold, in 1908. 53, 100, 251
Alaska, Interior, Placer gold mining. 591
"Alaska, Ketchikan and Wrangell Dists." †35
Alaska mine, Calif. 867, 1152
Alaska mining in 1908. *100, 201, 251
Alaska, Proposed railroad. *102
Alaska, Silver, in 1908. 54
Alaska, Tin. 101, 1041
Alaska-Treadwell. 100, 720
Alaska-Yukon-Pacific Expo. 426
Alba Mineral Co. 1021
Alberta, Coal. 565, 579, 623
Albro mine, Colo. 1015
Album for mill products. 1010
Algeria, Copper mines. 796
Algeria, Zinc mining. 955
Algoma dist. land opening. 915
Alice mine, Idaho. 328
Allanite, Value of. 469
Alleghany district, Calif. 967, 1105, 1152, 1207, 1210, 1301
Allen, A. W. Vacuum filtering. *1004, 1147
Alliance Coal Co. 1019
Allis-Chalmers power machinery. 20, *508, 862
Allouez, Mich. *60, 382, 429, 971, 1007
Alloys, Aluminum, calcium, etc. 1010, 1079
"Alloys and their Industrial Application." †1149
Alloy, Iron-cerium-lanthanum. 217
"Alloys, Metallic." †374
Almaden mines, Spain. 453
Alta Montana Cop. Co. 40, 233
Alum and aluminum sulphate, U. S. 1239
Alumina in copper blast furnace slags. 223, 1012
Aluminum and electrical work. 199
Aluminum coins in France. 11, 607
Aluminum direct from bauxite. 752
Aluminum in Japan. 1289
Aluminum in 1908. 140, 1095
—U. S. foreign trade. 336
Aluminum prices in 1908. *74
Alundum production. 1033, 1095
Alunite, Determination of. 1122
Alunitization. 177, 1121
Amador Consol. M. & D. Co. 1059
Amador Gold & Cop. Co. 673
Amador Mines Co. 1155
Amalgamated Asbestos Co. 826, 1260, 1308
Amalgamated Cop. Co. and properties. (See also names "Anaconda," etc.) *106, 108, 477, 514, 577, 718, 771, *953, 1020, 1157, 1210, 1251
—Report. 1199,1301
—Coal properties. *587, *847
Amalgamation and blanketing. 259, 265, 297, 310, 350, 543, 609
Amalgamation, Grass Valley. *439
Amalgamation of Transvaal mines. 130, 398, 619
Amalgamation plates, Notes on. 251, 361
Amalgamator, Rawhide, Nev. *348
Amatrice, New gem stone, Utah. *1038
Amazon, Upper, Auriferous alluvials. 496
—Gold dredging. 643
American Cement Co. 1259
American Cyanamid Co. 138
American Chemical Co. 504
American Chemical Society. 36, 966, 1104
American Eagle, S. D. 113, 235, 1060
American Electrochemical Soc. 866
American Esperanza Mg. Co. report. 1005
American Fullers' Earth Co. 1065
American Iron & Steel Asso. 76, 321, 334, 418, 562, 610, 911, 1095, 1114, 1148
American Inst. Chem. Engineers. 818, 1104
American Inst. Mining Engineers. 36, 178, 313, *458
—Meeting at Yale. 515
—Conservation meeting. 716
—Jas. Douglas' paper. 515, 1202
American Mining Congress. 520, 623, 820, 968, 1198, 1249
American Radiator Co. 614
American Smelters Securities Co. 236, 777
American Sm. & Ref. Co. 104, 113, 230, 369, 514, 617, 628, 1012, 1016, 1060, 1193, 1207, 1210
—Statements. 366, 417, 419
—Production in 1908. 389
—Cost, silver-lead smelting. 1007, 1010
—Kilker matte-tapping car. *1294
American Soc. Engineering Contractors. 913, 1151
American Soc. Mech. Engineers. 866
American Street & Interurban R. R. Engineering Asso. 840
American Vanadium Co. 996
American Zinc, Lead & Smg. Co. 70, 72, 286
Americus-Sylvanite Mines Co. 42
Ami, Henry M. 1300
Ammonia, ammonium sulphate. 82, 1051, 1095, 1241
Ammonia cyanide process. 814, 666
Ammonium persulphate, Etching agent *1040
Amy group, Idaho. 183
Anaconda Cop. Mg. Co. 59, *106, *215, 265, 474, 522, 562, 643, 885, 914, 960, 1200, 1207, 1251
—Belt coal mine *587
—Reports. 1153, 1199
Anaconda mine, Calif. 181
Anacortes talc mine, Wash. 1308
Anderson, C. E. Elec.-driven pumps 766
Anderson drill. 998, *1091
Anderson's drilling experiments. 551
Andes, Railroad across. *938
Andrews, Col. J. A., Death of. 376
Anglo-French Exploration Co. 869
Anglo-Siberian Co., Ltd. 1274
Ankylostomiasis. 650
Ankylostomiasis, Note on. 314
Anthracite coal. See "Coal."
Anti-Débris. See "Débris," "Dredging."
Anti-Japanese turmoil. 418
Antimony and gold mines, France. *792
Antimony and Ore in 1908. 62, *74, *121, 336, 1095, 1147
Antimony and tin determination. 850
Antimony, Burma and Lahaul. 1089
Antimony, China. 1276
Antimony, Determination of. 497
Antimony—Jamesonite ore treatment. 891
Antimony mines of Italy. 844
Apex Underwriters Syndicate. 276
App mine, Calif. 1062
Appalachian Engineering Asso. 376, 424, 966, 1104
Appalachian oilfield. 92, 98
Aquamarines, Brazilian mining. 1234
Arbouin mill, Queensland. 1092
Arcadian, Mich. *61, 577, 775, 1020, 1305
Ardis, furnace, etc. 168, *1129
Arens, Waldemar, Death of. 716
Argall, George O. 1206
Argentum mines, Ltd. 921
Argo works, Secret process at. 464, 963
Arizona, Copper. 56, 58, 103, 907
—Jas. Douglas on practice. 1202
Arizona Cop. Co. 59, 181, 231, 320, 380, 505, 1202
—Report. 561
Arizona Copper-Gold Mines Co. 103
Arizona Gold in 1908. 53, 103
Arizona Gold M. & M. Co. 1108
Arizona, Lead. 104, 763
Arizona, Mining code for. 1198
Arizona mining in 1908. 59, 103, 213, 372
Arizona Power & Water Co. 380
Arizona, Silver. 54, 59, 103
Arkansas, Coal. 91, 162, 237, 725
Arkansas Diamond Co. 870
Arkansas, Pike Co., Diamond mine. *152, 371, 616, 963
Arkansas, Zinc ore. 465
Arsenic mines resumption, Va. 1066
Arsenic, Rapid estimation. 945
Arsenic tariff. 777
Arsenic and arsenious acid production. 1090, 1095
Arts, Precious metals used in. 499
Arteaga dist., Mex., Mining in. 700, 963
Asbestos, Canada. 563, 571, 826, 1260, 1308
Asbestos, N. C. 234
Asbestos, South Africa. 623
Asbestos, U. S. 1095
Asbestos, Ural deposits consolidated. 812
Asbestos, Wyo. 111, 1016
Ash Creek Co., Ariz. 103
Ash in coke, Estimation of. 899
Ashanti. See also "West Africa."
Ashanti Goldfields Corp. 197
Ashboro Gold Mg. Co. 1065
Ashworth, J., Opinions of. 266, 1006
Asphalt, Calif., in 1908. 121
Asphalt, Italian. 497
Asphalt lands, Calif., Disposal. 1233
Asphalt, N. M. 111
Asphalt, Nigeria. 1037
"Asphalts: Sources and Utilizations." †1013
Assay fluxes, Borax in. 696
Assay of gold in copper bullion. 465, 569
Assay office, U. S., Salt Lake Cy. 378
Assays, Crucible. 1243
Assaying silver bullion. 942
Assaying stamp-mill by-products. 947
Assessment work—Legal decision. 821
Assessments, Coal-land, Penn. 776
Assets Gold Mg. Co. 1306
Associated Oil Co. 93, 573, 606, 811, 1059
Asten's aneroid barometer. *258
Astley, J. W. 1014

201859

PAGE

Atchison, Topeka & San Fé. 169, 1198
Atkinson, A. S., Mica mining. 941
—Mining for gems, Brazil. 1234
Atlanta dist., Idaho. 118
Atlantic mine, Idaho. 183
Atlantic mine, Mich. *62, 232, 525
Atlas bottom-delivery electric charging car. 619
Auriferous alluvials, upper Amazon. 496, 643
Aurora mine, B. C. 527, 1111
Australasia, Coal. 126, 887
Australasia Copper. 124, 814, 681, 764, 852, 907
Australasia, Gold. 53, 123, 297, 323, 423, 460, 565, 606, 661, 864, 990, 1098
Australasia, Iron ore deposits. 349
Australasia, Lead. 123
Australasia mining in 1908. 123
Australasia, Silver. 123, 297, 565
Australasia, Tin. 125, 423, 468, 652, 902, 1092, 1280
—Discovery, Pine creek. 1272, 911
Australasia, Zinc. 68, 124, 265
Australasian mineral leasing. 1133, 1048
Australia—Queensland mining. *603, *635, *746, *802, *838, 1092, *1125
Australia, Western, Dividends. 711
Australia, Western, Gold, Nov. 29
Australia, Western—Tin and gold—State mills. 69, 218
Australian collieries, Electricity in. 317
Australian iron bounties. 611
Australian shale-oil industry. 1051
Austria, Coal-mining accidents. 90
Austria, Coal. 630, 780
Austria-Hungary, Copper. 681, 907
Austria-Hungary, Iron. 1098
Austria, Salt. 1091
Austria, Spelter, in 1908. 265
Austria, 9-hour law. 1052
Austrian mines, Rescue apparatus. 414
Austrian petroleum agreement. 1112
Autonite. 257
Awaya, Ikeda & Co. 1159, 1213

B

Babbitt metal, Drawback on. 261
Babbitt, Seward. 572
Babcock & Wilcox Co. 169
Baca Grant Float No. 4. 104
Back-balance hoist, Addison's Flat. *198
Baddeleyite. 548
Badger mine, Ont. 281, 527
Badische Anilin und Soda-fabrik. 620
Bagdad-Chase G. M. Co. 118
Bahia, Diamond-bearing highlands. *981, *1029
Baikal province, Minerals of. 1034
Bailey, John D., Death of. 472
Bain, H. Foster. 669
—Illinois petroleum. 93
Baker, F. W. 264, 268
Balakiala Consol. Cop. Co. 521, 1152
—Report. *501
Balata belts. 321
Bald Butte Mg. Co. 819, 914, 1253
Bald Mountain tunnel, Colo. 379, 381
Baldwin, Elias J., Death of. 520
Balfour Pink Granite Co. 1065
Ball mills, Mt. Morgan. *802
Ball & Stuart. 317
Ball, S. M. Manganese, Va. 1056
—Tin deposits of the Carolinas. 1139
Balloon survey. *1079
Baltic, Mich. See "Copper Range."
Baltimore & Ohio R. R. 428, 529, 758, 1054
Bamberger De Lamar G. M. Co. *451
Bank holdings, Gold, in 1908. 54
Banks, French—Mining enterprises. 607
Banque de Radium. 811
Bantjes mill, Transvaal. 361
Baraboo range. 610, 711, 767
Barber, Amzi O. L., Death of. 866
Barbour, Percy E. 324, 1057, 913
—Foundations, Goldfield Consol. mill. *1173
Barium determination, Volumetric method. 814
Barker, Perry. 1206
Barkley farm, Ind., coal discovery. 183
Barn, Davis Colliery Co.'s. 1287
Barnes-King, Mont. 233, 625, 971
Barometer, Aneroid, Asten's. *258
Barometer, Electric. 462
Baron, H. J. Rio Plata mine and mill. *147
Barr, James M. 424
Barren zone, Northern Appal. coalfield. 509
Barrier, Safety, Heinitz colliery. 1244
Barrow Hematite Steel Co. 1188
Barry, J. G. Bottineau gas field. 1089
Barthou on coal dust. 367
Bartlett mine, Ont. 43, 778, 1260
Barton, G. C., Death of. 1300
Barytes, Floated. 469
Barytes, Kentucky. 1251
Barytes price in 1908. 82
Barytes, Tenn., in 1908. 137
Barytes, Questions on. 965
Baskerville, Charles. 1014
Baskerville C.
—Rare metals. 10, 203, 257, 518, 548, 813
—Legal status of works producing noxious gases. 884

PAGE

Baths for coal miners. 801
Batopilas Mg. Co., Mex. 528, 724, 826
—Report etc. 912, 1112
Battersby, W. F. 36, 228
Battery and cyanide costs. 696
Bear Creek Coal Co. *845, *846
Bear Gulch Placer Mg. Co. 918
Beard, J. T., on explosions. 411, 416, 899, 1197
Beardsley, G. F. Alumina in slags. 223, 1012
Beasley, N. B. Salt production with exhaust steam. 1150
Beaver mine, Ont. 778, 1112, 1209, 1214, 1255
Beaver Carbonate mine, Utah. 873, 973, 1111
Beck Tunnel, Utah. 1259
Bedding system, Cananea Consol. 703
Beeler, Henry C. 621
—Wyoming mining. 111
Belcher mine, Colo. 106
Belcher Silver Mg. Co. 464
Belgium, Accidents with Explosives. †1013
Belgium, Coal-mining accidents. 90
Belgium, Coal. 386, 482
Belgium, Iron. 1098, *1221
Belgium, Old miners' pensions. 911
Belgium, Spelter, in 1908. 265
Bell, R. N. Idaho in 1908. *115
Bellière mines, France. *792
Belmont, Tonopah. See "Tonopah-Belmont."
Belt mine, Mont. *587
Belts, Balata. 321
Bendigo—Saddle reefs; temperature. 323, 348, 560
Benedict, C. H. 770
Benefit fund, coal-miners' families. 570
Bengal coal-mining industry. *555, 558
Benguelia Railway. 38, 407
Bennetts, B. H. Magnetite treatment in copper blast furnace. 962
Benson mine, Calif. 39, 428
"Berechnung und Untersuchung des Eisenhochofens." †815
Beringer's tin-assay method. 651
Berlin as gold market. 518
Berry mine, Maine. 1129
Bertha zinc mines, Va. 1011
Berwind-White Coal Co. 964
Beryl, Maine. 1127
"Beryllium, Chemistry and Literature." †1013
Beskow, K. I. Meyer's tangential chambers. 1033
Bessemer Coal, Iron & Land Co. 327
Bessemerizing copper. *1081
Bethlehem Steel Co. 780
Béthune, Compagnie des Mines de. *653
Betts process. 891, 892
Bewick, Moreing & Co. 372
Bichel, Prof., on coal dust. 952
Biermann, Henry, Death of. 669
Big Four R. R. Co. 1016
Big Mitt mine, Utah. 431
Big Six, Ont. 43
"Big Vein" coal seam, Working. *303
Big Vein Pocahontas Coal Co. 777, 1021
Bigelow, A. S. 514, 525, 568
Bighorn basin coalfields. 163
Bin, Steel, Davis Colliery Co.'s. *1287
Bins, Measurement of contents. 641
Bingham Amalgamated Co. 281
Bingham-Butte, Utah. 186
Bingham Metals Mg. Co. 378
Bingham Mines Co. 378, 920
Bingham, Utah, map. *114
Birdsboro Steel Fdy. Mach. Co. 649
Birkeland-Eyde nitrate industry. 620
Birmingham Coal & Iron Co. 327, 380, 505, 896, 899
Bisbee Coalition Mg. Co. 1256
Bishop, J., & Co. 1010
Bishop, L. D. Notes on cyanidation. *842
Bismarckhütte elec. steel process. 1147
Bismuth. 151, 1095
Bismuth, copper and nitric acid. 938
Bismuth-ore tariff. 609
Bits for drills, Selection and use. *1183
Bitumen and oils, West Africa. 1037
Bituminous coal. See also "Coal."
Bituminous Coal & Coke Co. *845
Bixby's, Perry, mine, Calif. 1301
Black Eagle falls, Mont. *408
Black Hills, New smelter for. 675
Black Hills Porcelain, Clay, etc. Co. 675
Black, Neil, Death of. 770
Blackburn, W. D. Topographic engineering. 997
Blackbutte, Ore., Dennis furnace. 141, 235
Black Hole mine, Nev. 41
Blaisdell Co.—Adair-Usher process. 317
Blake, William P. 1300
—Arizona mining. 103
Blake & Knowles pump. 219
Blakney hydraulic air compressor. *841
Blanc turbo-classifier. *500
Blanchard, J. H., Death of. 472
Blanketing, etc., Notes on. 259, 265, 297, 310, 350, 543, 609
Blanketing, Giant mine, Rhodesia. 259
Blast. See "Furnace," "Dry," etc.
Blast holes, Loading. 225
Blast roasting. 613, 602

PAGE

Blasting. See also "Explosive," etc.
Blasting accidents, Economy and. 359
Blasting accidents, metal mines, Prevention. 299
Blasting—Blown-out shots. 84
Blasting—Coal-dust question, Eng. *1084, 1196, 1290
Blasting—Elec. shot firing by Utah Fuel Co., etc. *193, *243, 417, 617
Blasting—Fuse-spitter suggestion. 813
Blasting notes. 180, 219, 212, 220, 246, 314, 766, 415, 462, 512, 566, 612, 648, 762, 769, 952, 1006, 1052, 1096
Blasting powder, Mfr., by miners. 812
Blasting reports, Mont. coal mine. *848
Blasting—Tamping shot holes. 813
Blasting tests, Geol. Surv. 29, 196, 212, 446, 1190
Blasting—Views on explosions. 12
Blasting—Windy shots. 467
Blaugas Co. of America. 965
Bleeding timber. 461
Bleichert, Adolf, & Co. *391
Blendes, Okla., Analysis. 1148
Bliss, Fred G., suit. 265, 474, 885, 914, 960, 1200
Bloomer, G. R. Alamos and Arteaga dists. *699, 963
Blower, Rotary, in smelting works. *352
Blowing engines, Gas, at Gary. 20
Blown-out shots. 84
Blown-out shots and miners' negligence cause many explosions. 12
Blue Bell mine, B. C. 248, 249, 250
Blue Bell mine, Nev. 185
"Blue gas," German illuminant. 465, 965
Blue Lead mine, Calif. 277
Bluejacket strike, Okla. 1110
Bluestone Mg. Co. 120
Boeke's new potash salt. 1239
Bogardus, C. E. 866
Boilers, Burning wood under. *499
Boilers, Notes on. 415, 612, 663, 906, 1096
Boilers—To prevent rust. 1091
Boldsworthy, W. E. Sectional gin poles. *817
Boleo mines, Lower Calif. 127, 826
Boléo, Compagnie de. 1061
Bolivia, Copper. 681, 907
Bolivia, Tin-ore arrivals from. 240
Bonanza creek, Yukon, Dredge on. *833
Bonanza mines, Guggenheims'. 964, 1159
Bonanza mine, Salome, Calif. 819
Bonanza claim—Harrison Gulch case. 717
Bonanza King, Sierra co., Calif. 1152
Bonanza King, Trinity co., Calif. 771
Bonney on eclogite nodules. 790
Bonnie Clare M. & M. Co. 229, 872, 1307
Bonsall claims, Ont. 432, 974
Boorman, T. H. "Asphalts." †1013
—Bitumen and oils, West Africa. 1037
Borax hauling with string teams. 1078
Borax in assay fluxes. 696
Borax in 1908. 82, 121, 137
Borax, Platinum in. 1232
Borax Properties, Ltd. 138
Bore-hole, Surveying apparatus. *854
Bore-holes, Oil extraction from. *1001
Boring. See also "Drill," etc.
Boring machine, Tunnel, Terry, Tench & Proctor, Practical test. *1296
Boring machines, Rotary, Tunnel. 1106
Boston coal receipts in 1908. 283
Boston Consol. 113, *114, 235, 275, 479, 771, 859, 1060
—Report. 760
Boston & Corbin. 108
Boston & Montana. 59, *106, 275, *408, 718, 867, *953, 1020, 1251
—506-ft. chimney, Gt. Falls. *156, *323, 1301
Botsford, C. W. Geol., Guanajuato dist. *691
—Zacatecas dist. and relations. *1227
Bottineau gas field. 1089
Boudouard, O. Coal oxidation. 995
Boulder co., Colo., tungsten field. *1055
Boyd-Gordon claim, Gowganda. 901
Boyer Nevada Cop. Co. 1212
Boyle, Emmet D. 1014
Bradley, C. S.—New process 1054, 1212, 1245
Bradley, Geo. W. 716
Bradshaw lease, Rawhide, Nev. 184
Brainard, Frederick H. 376
Brakpan mines, Transvaal. 130, 559
Branch Mint, S. D. 113, 331, 722
Brand, J. J. F. Sand boils. 457
Brandes, Juan Felix. 818
Branner, J. C. Ark. diamond region. 371, 616, 963
—Diamond-bearing highlands, Bahia. *981, *1029
Brazil Block Coal Co. 868, 968
Brazil—Bahia—Diamonds, manganese, copper, gold, salt, saltpeter, pigments, marble, limestone, mica, etc. *981, *1029
Brazil, Diamantina district. 856
Brazil, Mining for gems. 1234
Brazilian monazite. 761
Breathing. See also "Rescue."
Breathing apparatus, Austrian mines. 414
Breathing apparatus, Indiana. 762, 823

PAGE
Breathing apparatus, Various. 462, 558, 1052, 349
Bretherton, S. E. 376, 520, 572
—Zinc extraction from mixed ore. 666, 814
Brick, New York. 1273, 1274
Brick, Shape—Furnace construction. *447
Bridge, Ore-handling, Duquesne Wks. *944
Bridger Coal & Impvt. Co. *846, 848
Briey basin iron ores. 1083, *1221
Brigham, H. A. Hydraulic mining. *23, 320
Briquets, United Kingdom, exports. 284
Briquetted-coal tests, Goss'. 611
Briquetting coal in U. S. 769
Briquetting, Note on. 1052
Brisker, C. "Eisenhochofens." †815
Britannia Mg. & Smg. Co. 250, 479
Britannia mineral zone; Brit. Cop. Co. 888
British. See also "United Kingdom."
British-Butte Mg. Co. 230, 275, 326, 329, 382, 674, *991
British Col., Coal. 247, 250, 627, 333, 479, 565, 580, 676
British Col., Coal mining, Hosmer. *896
British Col. Cop. Co. 249, 281, 723, 826, 973, 1111
—Report. 568
British Col. financial statement. 479
British Col. laws proposed. 475
British Col. production in 1908. 247, 580
British Guiana. See "Guiana."
British Metalliferous Mines Co. 1293
British Ore Concentration Syndicate. 38, 216
British South Africa Co. 407
Broadbent, R. L. 676
Brodie, W. M. Cyanide lixiviation by agitation. *695
Broken Hill. See also "Zinc Corp."
Broken Hill Block 10 Co. 219, 939, 954, 1226, 1246
Broken Hill Concentrating difficult lead ores. 939
Broken Hill Junction North mine. 851, 860, 940
Broken Hill notes. 68, 122, 123, 177, 213, 320, 372, 835, 1205, 1275
Broken Hill practice—Tonnage estimation. *640
Broken Hill Prop. 52, 124, 204, 259, 322, 757, 816, 1022, 1246
—Reports. 6, 1226, 1246
Broken Hill, Wage question. 1226, 1246, 816
Broken Hill, Water losses at. 851, 860
Broken Hills mine, Nev. 185, 330, 430, 578
Bromine, U. S. 1000, 1095
Brookite. 10
Broomassie mine, West Af. 197
Brough, B. H., Memorial to. 1095
Brown agitating tanks. 650, *695
Brown Bear mine, Idaho. 118
Brown, R. Gilman. 669
Brown, R. S., Death of. 1058
Brown, W. G. Silver-lead mining, Freiberg. 987
Brownprints, Granby Co.'s. 256
Bruce, James L. 621
Brummett Coal Co. 1259
Brunswick mine, Calif. 867, 967
Brunton, D. W. 313, *458
Brunton sampler, etc. 271, 420, 516, 862
Brush, Edw., Testimony of. 1008, 1010
Brush on lead tariff. 617
Bryan mine, Mont. 721
Brydon, John C. 818
Buck Eye Pipe Line Co.'s conveyer. 313
Buckets or skips, Sinking vertical shafts? 644
Buckley, E. R. 1009
Buehler, H. A. 1009
Buffalo Consol., Utah. 723
Buffalo Mg. Co., Mont. 867
Buffalo steam pump installation. 814
Buffet, E. P. Mining safety laws. 175
Buie, Col. H. T. and Ark. diamonds. 372, 616, 963
"Building Construction and Superintendence." †1149
Bulask, Francis J. 1014
Bulkhead door, Water-tight. *262
"Bull market," Psychology of. 1247
Bullfrog Gold Bar, Nev. 229
See also "Gold Bar."
Bullfrog Pioneer Co. 185, 234, 330, 430, 968, 972, 1212, 1307
Bullion-Beck Co. 573
Bullion, Gold Determining silver in. 543
Bunker Hill mine, Calif. 39, 380, 1210
Bunker Hill & Sullivan. 63, 275, 1063
Burbidge, Frederick. 274
Bureau of Mines, National. 558, 608, 714, 765
Bureaucratic intelligence. 506
Burma, Petroleum. 310
Burr & Fergusson. 1151
Burraga mine, N. S. W. 122
Burris, Allen L. 180
Burrows, J. S. 716
Burt filters, El Oro, Mex. *683
Burwash creek, Yukon. 724
Bushnell, A. F. Dredging at Butte. *991
Buster mine, Idaho. 118
Butler-Liberal, Utah. 522, 1066
Butler, M. Explosions in coal mines. 16
Butte-Alex Scott Co. 474, 577, 971
PAGE
Butte & Balaklava. *106, 429
Butte & Boston. 59, *106, 1251
Butte Central Cop. Co. 233, 522, 674, 1105
Butte Coalition. *106, 108, 279, 718, 1251, 1253
Butte-Continental Cop. Co. 275, 349
Butte Corbin Copper Co. 349
Butte & Corbin Co. 184
Butte corporations, Reports. 349
Butte creek tailings decision. 505
Butte, Dredging at. *991
Butte & Elliston. 577
Butte & Ely, Mont. 278, 349
Butte Hill Cop. Co. 329
Butte Hill Cop. Mg. Co. 1153
Butte inspector's report. 38
Butte-Knickerbocker. 577
Butte & London. 108, 278
Butte-Milwaukee. 577, 1064
Butte mines taxation. 59
Butte mining companies, Reports. 1251
Butte mining properties—Map. *107
Butte Mining Stock Exchange. 179
Butte-Montana Mg. Co. 378, 429, 474, 577
Butte Reduction Works. 912
Butte & Superior. *106, 108, 233, 776, 971, 1064, 1110, 1157
Butte & Verde G. & C. Co. 916
Butte & Yerington, Mont. 279
Butte, Zinc mining. 912
Butte water, Copper precipitation. *953
Butters, Chas., & Co., Ltd. 705
Butters vacuum filters. *1004, 1147
Buying equipment, Publicity in. 1146
By-products, Conservation of. 1202

C

C. O. D. Consol., Nev. 330, 430
C. S. Dust as factor in explosions. 14
Cables, Electric, Notes on. 462, 512
Cableway, New Caledonia. *391
Cactus mine. See "Newhouse."
Cadegan, John, Death of. 324
Cadmium determination in spelter. 1036
Cadmium in soft solders. 1140
Cadmium in 1908. 99, 1095, 1141
Cairns, D. D. 1154
Calamine Mg. Co. 676
Calamine tariff decision. 268, 272, 461
Calcium chloride for dust. 1196, 1238, 1244, 1290
Calcium chloride production. 1247
Calcium cyanamide. 138
Calcium in 1908. 1095
Calcium, Metallic, Electrolytic production. 1147
Calcium nitrate industry, Norway. 620
Calcium sulphate, Behavior of, at elevated temperatures with some fluxes. 602, 613
Caldecott, W. A. 164
—Precipitation of gold and silver by solable sulphides. 841
Caldwell, H. W., Death of. 36
Calera mine and mill, Mex. *706
California, Borax, in 1908. 121, 137
California, Coal. 91, 162, 1191
California, Copper. 56, 121, 907
California desert region, Iron deposit. *785
California dredging, etc. See "Dredging," "Hydraulic," etc.
California, Fuel question. 887
California, Gold, in 1908. 53, 121
California laws, 8-hour and others. 325, 473, 489, 521, 522, 573, 622, 670, 715, 771, 819, 966, 1014, 1059, 1097, 1105, 1152, 1207, 1247
California Liquid Asphalt Co. 325
California, Magnesite. 138, 292, 717
California mining in 1908. 121, 200, 517
California mining-safety laws. 176
California-Nevada Consol. Placer Co. 521, 1156
California oil and asphalt lands, Disposal. 1233
California, Oil and gypsum locations. 1046
California oil companies—Dividends. 93, 811
California, Oil production, Extension. 1198
California, Petroleum. 92, 121, 517, 573, 622, 887, 1191
California, Quicksilver. 141, 892
California, River-bed mining. 909
California, Silver, in 1908. 54, 121
California, Smelting progress. 199, 275, 885
Callie Leasing Co. 576
Callot, Lorraine deposits, Oolithic iron ore. *1221
Calumet & Ariz. 59, 103, 213, 312, 969
—Report. 807
Calumet & Hecla. *60, 232, 329, 382, *454, 721, 823, 918, 1020, 1258
—Bigelow settlement. 514, 525, 568
—Drill-sharpening device. *1073
Camarines notes. 479
Caminetti bill, New. 473, 622, 819
Camp Bird, Ltd., Colo. 39, 105, 524, 673, 720, 871, 1153, 1157
Campbell, C. M., Methods of mining Granby orebodies. *252
Campbell, F. C. 920
Campbell, W. Microstructure of ore from Frisco mine. *260
PAGE
Campion, Alfred. 1300
Canada Coal. 247, 333, 479, 563, 579, 623, 627, 1006
Canada, Coal, Duties on. 523, 811, 1309
Canada, Conservation of resources. 968
Canada, Copper. 56, 134, 247, 563, 681, 752, 764, 907
—Correction. 1054
Canada, Gold. 53, 135, 247, 563, 752
Canada, Iron and steel. 134, 247, 334, 563, 610, 711, 752, 1098, 1217
Canada, Iron and steel bounties. 564
Canada, Lead bounty. 249, 1022
Canada, Mica. 941
Canada, Mineral production, in 1908. 563
Canada, Natural gas. 135, 563, 719, 752, 1154
Canada, Nickel, in 1908. 134, 563, 752
Canada, Peat fuel. 379, 905
Canada, Report on Mg. and Met. †374
Canada, Silver. *133, 247, 563, 752, *1269
Canadian-American C. & C. Co. 1021
Canadian Cement and Concrete Asso. 621
Canadian Forest Reserve regulations. 574
Canadian Metal Co. 248, 249, 250
Canadian Mining Institute 274, 472, 913, 1014
—Annual meeting. 571, 563
—Prize offer. 1058
Canadian mint statement. 479
Canadian Northern Ry. 772
Canadian rail specifications. 758
Canadian Western Mine Owners' Asso. 966, 1111
Cananea. See also "Greene."
Cananea, Caving system at. 1205
Cananea Consol. Cop. Co.—Slag car used at smelter. *204
—Detailed report for 1908. 701
Candelaro Co., Mex. 480
Cannon-ball mills, Rawhide, Nev. *348
Cantera vein, Mex. *1227
Cape Colony, Copper. 681, 907
Cape Copper Co., Ltd., report. 227, 907
Cape-to-Cairo railway. 796, 407
Car, Bottom-delivery, electric charging, Atlas. *619
Car, Matte-tapping, Kilker. *1294
Car, Mine, Granby Co.'s. *256
Car, Slag, used at Cananea. *204
Car supply, Coal, in 1908. 83, 86
Car wheel, Mine, Improved type. 1180
Cars, Coke, P. R. R. 658
Cars, Koppel, Copper Queen mines. *541
Carballino Gold & Arsenic Mines. 795
Carbon dioxide in producer gas. 1271
Carbon dioxide, New York. 1273
Carborundum production. 1095, 1226
Card system, Mt. Morgan. *805
Carlyle, W. A. 178, 274
Carmen Mines of El Oro. 1061
Carmichael Bradford process. 6, 602, 613
Carne, J. E. Copper Mining, N. S. W. †35
Carnegie Co.'s bridge, Duquesne. *944
Carney Cop. Co. 278
Carnahyba mine, Brazil. 1030
Carnotite. 519
Carpenter, W. E. 966
Carper, J. B. Milan mine. 318
Carr, John E., Death of. 621
Carson, Ellard W. 376
Cartridge, Mining, Hydraulic. 769
Case, B. H. Tonnage estimation. 1011
Cassel, Sir Ernest. 1293
Castle Gate mine, Utah. *243
Catawba mines, N. C. *293, 294, 295, 296, 460, *937, 1021, 1110
Cave-ins over anthracite mines, Legislative inquiry. 316
Caving system at Cananea. 1205
Cedar-Talisman Consol. 42, 383, 718, 1213, 1259
Cedro mill, Mex. *683, *688
Cement & Concrete Asso., Canadian. 621
Cement, Detecting free lime in. 506
Cement industry in 1908. 213, 996
Cement, New York. 1273
"Cement, Portland, Industry from Financial Standpoint." †618
Cement, Canada. 563, 571, 752
Cement, Russian exports. 1004
Centennial-Eureka, Utah. 378, 777
Centennial, Mich. *60, 1007
Central Boulder lease. 652
Central Colorado Power Co. 1298
Central Consol. mine, Calif. 967, 1108
Centralia, Ill., oil find. 94
Centre Star mine, B. C. 250, 778
Cerro de Pasco Co. 764
Cerro de Pasco smelter. 126, 826
Cerro de Pasco, Coking of coal with fine ore. 292
Cerros Colorados, Mex. 680
Chafey, E. S. 120
Chafey Mines Co. 775
Chair, Sampling. *218
Chamberlain iron-ore mines. *1
Chambers-Ferland, Ont. 186, 527, 580, 628, 1112, 1260, 1269, *1271
Champion, Mich. See "Copper Range."
Chance, H. M. Cost of mining coal. *1099
—Views on engineers. 1101, 1201
Change of feeling, The. 513
Channing, J. Parke. 274, 520

PAGE
—Lick Branch relief fund. 667
Chapman, T. Steel-ore mining, Joplin dist. *942
Charles, H. L. 424
Chase, T. American prospector in Mex. 694
Chase Creek, Ariz. 181
Chatelet mines, France. *793
Chattanooga dist., Iron operations. *1
Check system of shot firing. 244
"Chemical Engineer," Meaning of. 769
Chemical, Met. & Mining Soc. of So. Af. 180, 990, 1293, 1252
Chemicals, Foreign trade, in 1908. 336
Chemicals, Prices, in 1908. 82
Cherokee Chemical Co. 504
Chersen drill. 549, 999, *1090
Chesapeake & Ohio coal traffic. 187, 433, 629, 964
Chewawa Land & Smg. Co. 777
Chicago coal market in 1908. 84
Chicago iron market in 1908. 78
Chicagoff Gold M. & M. Co. 1062
Chickasha Mineral Oil and Silica Co. 1259
Chihuahua Cop. Co. 419
Chihuahua, S. W., map. *148
Chihuahua, Western, Traveling in. *706
Chile, Copper. 681, 764, 907
Chile mill, The. *1182
Chillagoe companies. 125, *603, *1125
Chillagoe dist. copper mines. *603, *1125
Chimney, 506-ft., Gt. Falls smelter. *156, *323
China, Antimony in. 1276
China, etc., Gold. 53
China, Ore-dressing plant in. 812
China, Petroleum; coal; copper. 1226, 1244, 1280
China, Silver trade. 217
Chinese and negro labor, Transvaal. 463
Chino and Santa Rita. 1054, 1212, 1245
Chipps mine, Calif. 967, 1152
Chittenden, H. W. Courtland, Ariz. 312
Chlorination, Mt. Morgan. *802, *838
Choco region, Colombia, Project. 667
Christensen, A. O. Fuse spitter. 813
Chrome ore, Beluchistan. 835
Chrome iron in Calif. 473
Chrome, New Caledonia, etc. 628, 1094
Chrome ore, U. S. 1095, 1233
Chromium, Metallic, from chromite, etc. 767, 1129, 1293
Chronology of mining, Monthly. 33, 320, 505, 715, 964, 1193
Chrysolite mine, Colo. 39, 328, 1109
Chrysolites, Brazil. 1235
Church, J. A. Goldfield Consol. sampling mill. *311
—Sampling by machine. 516, 420, *269, 862
Churn drill, Successful prospecting with. 420
Chute construction, Granby Co.'s. *253
Chutes, Swinging, for coal mines. *362
Chynoweth, James. 424
Cienega mine, Mex. 127
Cieneguita Copper mines, Mex. 676
Cinco Minas, Mex. 236
Cipher, Multi, device. *560
Cirkel, F. Opastika lake dist. *455
Citico Furnace Co. 1, 4, *6
City Deep mine, Transvaal. 559
City of Cobalt mine, Ont. 432, 1269
Claims, Mining, Patenting. 1146
Clapp, Charles H. 1300
Clara Consol., Ariz. 181
Clark Cop. Co. 1057, 974
Clark, D. Bendigo notes. 151, 323
Clark-Montana Realty Co. 59
Clark properties, Mont. *106, 108, 912
Clark, W. B. "Maryland Mineral Industries." †35
—Mineral production of Md. 903
Clark, Will L. 1198
Classifier and jig, Richards pulsator. 544
Classifier, Merrill. *808
Classifier, Overstrom's. 1153
Classifier, Turbo-, Blanc. *500
Claudet, A. C. Copper precipitation. 398
Clay, Calif., in 1908. 121
Clay, Fire—Origin of coal. 177
Clay materials, New York. 1273, 1274
Clay, Refractory—Note. 171
Clay, "Wonderite." 1107
"Clays," H. Ries on. †815
Clement, J. K. Carbon dioxide in producer gas. 1271
Clements, J. Morgan. 818, 1300
Clennell, J. E. Borax in assay fluxes. 696
Cleveite. 257
Cleveland Cliffs Iron Co. 610, 711, 721, 1242
Cleveland shaft, Colo. 39, 232, 328, 673, 720, 1301
Clifty Consol. C. & C. Co. 1110
Clinton Coal Co., Ind. 673
Close, F. Useful formulas. 1241
Closets in mines. 314
Clover Leaf mine, Ind. 477
Clowes lamp. 314
Coal. See also "Accident," Explosion," "Explosive," "Blasting," "Law," proper names and many other entries.
Coal, Ala. 86, 91, 162, 629, 677
Coal, Alberta. 565, 579, 623
Coal and coke freight discriminations, etc., Alleged. 44, 428, 725
Coal and coke industries in 1908. 83
Coal & Coke Ry. map. *1285
Coal and stone-cutting process, Cable, Neukirch Freytag. *1236
Coal, Anthracite, trust case. 827
Coal, Anthracite mines, Legislative inquiry as to cave-ins over. 316
Coal, Anthracite, labor matters. 405, 414, 423, 513, 615, 710, 764, 811, 908, 964
Coal, Anthracite roads, Hepburn law. 959, 961, 1261
Coal, Anthracite, shipments in 1908. 283
Coal, Anthracite sizes—Cu. ft. 640
Coal, Anthracite, U. S., 1908. 51, 91, 1095, 1226
Coal, Ark. 91, 162, 237, 725
Coal, Australasia. 126, 887, 1051
Coal, Austria. 630, 780
Coal, Belgium. 386, 482
Coal, Bengal, mining industry. *555, 558
Coal, Bituminous, Composition of. 1290
Coal, Bituminous, U. S., 1908. 51, 91, 1095, 1226
Coal briquetting in U. S. 769
Coal, Brit. Col. 247, 250, 627, 333, 479, 565, 580, 676
Coal, B. C., Mining at Hosmer. 896
Coal, Bunker, sold to vessels. 529, 530
Coal, Calif. 91, 162, 1191
Coal burning, Smokeless, Rules. 1142
Coal, Canada. 333, 563
Coal, Canadian duties. 523, 811, 1309
Coal, Canadian N. W. resources. 1006
Coal, China. 1244
Coal, Coastwise shipments. 529
Coal, Coking of, with fine ore at Cerro de Pasco. 292
Coal—Colliery notes. See "Air," Accidents," "Blasting," "Boilers," "Breathing," "Briquetting," "Coal cutters," "Coal dust," "Coke," "Concreting," "Drills," "Electric," "Fires," "Gases," "Explosions," "Explosives," "Haulage," "Hoisting," "Lamps," "Laws," "Peat," "Pillars," "Pumps," "Rope," "Safety," "Shaft sinking," "Signals," "Timbering," "Ventilating," etc.
Coal, Colo. 86, 91, 162, 379, 433
Coal companies establish rescue stations. 951
Coal, Cost of mining, Investigation. 948
—Curves based on seam thickness. *1099
Coal cutters, Newkirch-Freytag. *1236
Coal cutters, Notes on. 367, 415, 1006, 1052, 1244
Coal-cutting machines, Comparison of. 1042
Coal-cutting machinery in Eng. 649, 1042
Coal, D. L. & W. statement. 761
Coal dust and explosions, Ill. 1191
Coal dust as factor in explosions. 14
Coal-dust explosions, Prevention. 84
Coal-dust explosions, Views on. 12
Coal-dust explosions, Pulverized shale for prevention of. 11
Coal dust—Is it as such explosive? 17
Coal dust, Mixing with stone. 367
Coal dust—Notes. 266, 314, 512, 906, 952, 1006, 1196, 1238, 1244, 1290
Coal-dust question, Gt. Brit.—Experiments, reports, legislation, etc. *1084, 1196, 1290
Coal-dust spraying as colliery safeguard. *193, 417
Coal-dust spraying, Garswood Hall mine. 1142
Coal duties, Refunds of. 373
Coal, Effect of dikes on. 801
Coal formation—Experiments, etc. 801
Coal, France. 623, 630, 780, 828, 968
Coal, France, Producing cost. 762
Coal, French companies—Stock prices. 561, 607
Coal, Gas, Action of sulphur in. 897
Coal, Ga. 91, 162, 1138
Coal, Germany. 333, 386, 434, 856, 1244
Coal, High-sulphur, Waste of. 801
Coal, Idaho. 118, 162
Coal, Ill. 87, 91, 162
Coal, India. *555, 558
Coal, Indiana.. 87, 91, 162, 663
—Discovery near Lowell. 1063
Coal, Iowa. 87, 91, 162
Coal, Japan. 91
Coal, Kan. 91, 162, 237, 725
Coal, Ky. 91, 162, 283, 1250
Coal, Lake rates. 875, 1160
Coal, Lake trade—Freight-rate study. 959
Coal, Lake traffic. 44, 48, 90
Coal-land locations, Mondell bill. 406
Coal lands, North Dakota. 765
Coal lands, Public, Pricing. 1137
Coal lands, Western, Govt. suits. 38, 378, 771, 819, 914, 1207
Coal lands, Western, Prices. 1096
Coal lands—Work of Geol. Surv. 211
Coal literature, Recent, Digest of—Isolation of areas from after gases of explosion; use of electricity; D. L. & W., McKell and Frick plants; barren zone of northern Appalachian field; conservation, life protection, waste prevention; coke-drawing machinery; installation of electric power; development of virgin field; mining methods, West. Penn., operator's standpoint; testing miners' oil. *507
—Discussion. 862
Coal market, Chicago, in 1908. 84
Coal, Md. 91, 162, 903
Coal merger, The Consolidation. 1054, 1063
Coal, Mex. 127, 1255
Coal, Mich. 88, 91, 162, 1007
Coal-mine explosions, Control of. 14
Coal-mine explosions, Views respecting. 12
Coal-mine legislation. 512
See also "Law," "Indiana" and other States.
Coal-mine legislation, Kan. 648, 176
Coal-mine legislation, Proposed. 568
Coal mine, Model, Westphalia. *1135
Coal-mine ventilation, Data on. 757
Coal mines, Discipline in. 224
Coal mines, Economical development; scheme for unusual demands. *800
Coal mines, Electric hoists for. *443
Coal mines, Electric shot firing in. *243, *193, 417, 617
Coal mines, Swinging chutes for. *362
Coal mines, Temporary fire walls. 650
Coal mines, Windy shots in. 467
Coal-miners' families, Benefit fund. 570
Coal-mining accidents in 1908. 83
Coal mining as investment. 665, 863
Coal mining, Central West Va. *1284
Coal Mining Inst. of Am. 1151
Coal-mining labor affairs; Indianapolis convention, etc. 83, 90, 226, 365, 405, 414, 423, 513, 615, 710, 715, 762, 764, 811, 871, 908, 964
Coal mining, Number employed in. 1052
Coal mining, Reflections on—U. S. and British statistics compared. 222
Coal mining, U. S., in 1908. 83
Coal mining with machines, Eng. *797
—Welsh miners object. 897
Coal, Mississippi. 162, 721
Coal, Missouri. 91, 162, 237, 725
Coal, Mont. 91, 162, 179
—Gt. Falls coalfield. *587
—Mining industry; map, etc. *845
Coal, Natal. 661, 826
Coal, Nevada mining. 558
Coal, N. M. 88, 91, 108, 162
Coal, New Zealand, Mining methods. *753
Coal, N. D. 91, 162
Coal, Nova Scotia. 333, 528, 565, 1244
Coal, Ohio. 90, 91, 162, 529, 779
Coal—Ohio Geol. Surv. reports. †35
Coal, Okla. 91, 162, 237, 361, 725
Coal, Oregon, in 1908. 91, 162
Coal, Origin of. 177
Coal, Oxidation of. 995
Coal, Penn. 85, 90, 91, 162, 283
Coal, Penn., land taxation. 776
Coal, Penn. & W. Va. shipments. 529
Coal, Penn., Cost of diamond drilling. 649
Coal prices by States. 948
Coal production, etc., discussed at Inst. Mg. Eng. 1303
Coal puncher, Energy of blow. 694
Coal railroad fines, Western. 725
Coal railroads, Ohio and W. Va. 1138, 1261
Coal recovery, Maximum, Mining methods for—"Big Vein" seam, George's Creek. *303
Coal, Roane Iron Co's. *3
Coal, Russia, in 1908. 212, 726
Coal, St. Louis receipts. 529
Coal, Saskatchewan. 565, 623, 676
Coal scale, Richardson automatic. 421
Coal seams, Two, Working in proximity. *756
Coal seams, Working, Notes on. 314
Coal, Seattle, Tacoma, shipments. 529
Coal, Spain. 453
Coal tariff. 164, 768
Coal, Tenn. 91, 162
Coal tests, Comparative, run-of-mine and briquetted. 611
Coal, Tex. 91, 110, 162
Coal-traffic notes, year 1908. 187, 237, 283, 385, 433, 529, 581, 629, 725
Coal, Transvaal. 523, 828
Coal, United Kingdom. 284, 678, 711, 1244, 1303
—Mining with machines. 649, *797, 897, 1006, 1042, 1052
—Colliery winding. 898, *904
—Kent coalfield. 910
Coal, U. S. 51, 83, 91, 1095, 1226
—Foreign trade. 333, 530
Coal, U. S. statistics of resources, production, etc., by States—Map and table *160
Coal, Utah. 91, 162, 1254
Coal Valley Mg. Co. 429
Coal, Vir. 91, 162, 1247
Coal, Wash. 89, 91, 162, 725
Coal washery, Mich. Consol. Coal Co's. *993
Coal, Washing and Coking Tests at Denver. †815
Coal, West Va. 89, 90, 91, 162, 529, *1284
Coal, Wyo. 89, 91, 111, 162, 163
—"Coalfields of Wyoming." †1149
Coal, Yukon. 620
Coals, Spaces occupied by. 367
Coaling station, U. S., Alaska. 1108

PAGE
Coalfield, Virgin, Development. 510
Coalfields, Bighorn basin. 163
Coalfields of U. S., with map and tables. *160
Coalton mine, W. Va. *1284
Coast dist., B. C. 888
Cobalt dist., Sampling ores from. 1283
Cobalt Central mine, Ont. 43, 331, 874, 1269
Cobalt district, Ont., Operations. *1267
Cobalt dist., 1908, with map. *133, 180, 752
Cobalt Gem mine, Ont. 1214
Cobalt Hyd. Comp. Air Co. 1255
Cobalt Lake mine, Ont. 580, 724
Cobalt, Ontario. 752
Cobalt-oxide manufacturers, etc. 134, 82
Cobalt, Silver production. *1269
Cobalt Silver Queen. 186, 480, 974, *1267
Cobalt Treasure, Ont. 874
Cobalt district—Note. 81
Cobar, Elmore process at. 177
Codd Mines Co. 674
Coenen, G. A. 520
Coeur d'Alene, Hand sorting. 1097
Coeur d'Alene, in 1908, with maps. *115
Coeur d'Alene mine reports. 1063
Coeur d'Alene powder plant. 1109
Coggin, F. G. 913
Coinage. See also "Mint," "Money," "Gold," etc.
Coin imports, France. 54, 631
Coins, Aluminum, in France. 11, 607
Coinage for Philippines. 498, 546
Coke, Ala., in 1908. 91
Coke, Brit. Col. 247, 250, 623, 580
Coke, Canada, in 1908. 564
Coke cars, P. R. R. 658
Coke, Colo., in 1908. 87, 91
Coke consolidations. 677, 1193
Coke-drawing machinery, Progress in. 510
Coke, Estimation of ash in. 899
Coke, Ga., in 1908. 91
Coke, Ill., in 1908. 91
Coke, Ky. 91, 1250
Coke-making costs. 950
Coke-making note. 367
Coke, Mont., in 1908. 91
Coke, N. M., in 1908. 88, 91
Coke, Ohio, in 1908. 91
Coke, Okla., in 1908. 91
Coke-oven by-product recovery. 1202
Coke-oven gas-engine plant, Largest. Eschweiler Mg. Co's. *1189
Coke ovens, Davis Colliery Co.'s. *1287
Coke, Penn., in 1908. 86, 91, 529
Coke properties, U. S. Steel Corp. 741
Coke-squeezing machines, Elec. operated. *647
Coke, Tenn., in 1908. 91
Coke, United Kingdom, exports. 284
Coke, U. S. 51, 83, 91, 1095
—Foreign trade. 333
Coke, Utah, in 1908. 91
Coke, Va., in 1908. 91, 1247
Coke, Wash. 89, 91, 529, 725
Coke, West Va. 89, 91, 529, 1138
Coke, Western, Use of. 1010
Cokes for blast-furnaces. 1244, 1290
Coking of coal with fine ore at Cerro de Pasco. 292
Cole, A. A. Sampling ores. 1283
Cole, Thomas F. 472, 669
Coleman, A. P. Iron ranges, Ont. 547
Coll, H. E. Economy and accidents. 359
Collecting precious-metal dust. *863
Colliery. See also "Coal" and cross references.
Colliery notes. See "Air," "Accidents," "Blasting," "Boilers," "Breathing," "Briquetting," "Coal cutters," "Coal dust," "Coke," "Concreting," "Drills," "Electric," "Fires," "Gases," "Explosions," "Explosives," "Haulage," "Hoisting," "Lamps," "Laws," "Peat," "Pillars," "Pumps," "Rope," "Safety," "Shaft-sinking," "Signals," "Timbering," "Ventilating," etc.
Colliery safeguards, Two efficient. 417
Collins, Bernard A. 1037
Collins, B. I. Rhodesian mines. 656
Collins Coal Co. 1060
Collins, Glenville A. 424
Collins, George E. 669
—Colo. mining. 104
Collins, H. F. Silver-lead smelting, Laurium. *881
Colombia as mining country. 375
Colombia, Dredging conditions. 1003
Colombia, Gold. 126, 705
Colonial mine, Ont. 331, 1209
Colorado, Coal and Coke. 86, 91, 162, 379, 433
Colorado, Copper. 56, 105, 907
Colorado Fuel & Iron Co. 109, 111
Colorado, Gold, in 1908. 53, 104
Colorado Gold Dredging Co. 276
Colorado Iron Works Co. *882
Colorado, Lead in 1908. 105, 763
Colorado mining in 1908. 104, 200
Colorado ores commission, Proposed. 379
Colorado, Petroleum. 92, 474
Colorado, Power development. 1298
Colorado School of Mines. 1104
Colorado Scientific Society. *842
Colorado, Silver, in 1908. 54, 104
PAGE
Colorado Smg. & Mg. Co. 885
Colorado State Geol. Survey. 276, 652
Colorado, Tungsten. 105, 1015, *1055
Colorado, Vanadium and uranium. 106
Colorado, Zinc. 105, 465
Colombia, Choco region, Project. 667
Columbia-Butte Mg. Co. 1301
Columbia Tool Steel Co. 609
Columbia University, New plan. 553
Columbus Consol. 42, 675, 868, 1066, 1111, 1158, 1259
Colvocoresses, G. V. New Hebrides. 957
Combination Fraction, Nev. 382, 430, 626
Combination Mines Co., Ore. 235, 626, 1307
Comer mines, Ore. 776
Commentry-Fourchambault, Société. 1061
Commercial depression, Reasons; gold markets. 518
Commercial movement of gold and silver. 54, *74, 190, 217, 239, 286, 388, 631, 646, 990, 1293
Commodities clause decision, etc. 959, 961, 1138, 1261
Commonwealth mine, Ariz. 104
Commonwealth Oil Corp., Ltd. 1051
Comoé, Compagnie Française. 1061
Compagnie. See also proper names.
Compagnie des Mines de Béthune. *653
Compagnie Industrielle du Platine. 1303
Compañia Mex. de Petroleo El Aguila. 1303
Compañia Minera Londres. 580
Company, Terminating life of, with mine. 1291
Compressed air. See "Air."
Comstock, C. W. Cyaniding. 843
Concentrating difficult lead ores, Broken Hill. 939
Concentration, Empire mill. *439
Concentration process, Murex magnetic. 1061
Concentration, Magnetic, Ont. iron ores. 548
Concentration methods, Mex. *493, 821
Concentration on Rand abandoned. 361
Concentrator, Washoe, Electric motors. 643
Concheño mine, Mex. 236, 724
Concrete, Injecting, Sinking in wet ground. *653
"Concrete lumber" and forest preservation. 421
Concrete mortar-blocks. 593, 850
Concrete tipple floors, Dawdon mine. 801
Concrete work, Goldfield Consol. mill. *1173
Concreting steel posts, etc. 367
Congo mines. 38
Congo, Railway building to. 407
Congo region, Copper. 475
Congress, Mining legislation. 171, 226, 261, 264, 265, 406, 399, 505, 517, 519, 558, 608, 610, 619, 714, 765, 1233
Coniagas mines, Ont. 1209, 1255, 1268, 1269
Conkling Mg. Co. 326, 473, 1208
Connell, Wm., Death of. 669
Connellsville, coke in 1908. 86
Conner, Eli T. 1151
Conqueror Consol. Mg. Co. 718
Conservation Conference, Internat'l. 466
Conservation in coal industry. 509
Conservation of natural resources. 33, 174, 212, 318, 320, 369, 421, 608, 619, 716, 859, 1048, 1133
—Jas Douglas' address. 1202, 515
—Canadian conservation. 968
Conserving labor. 561
Consolidated Goldfields of So. Af. 38, 180, 197, 858, 905, 938
See also constituent mines.
Consolidated Coal Co.'s washery, Mich. *993
Consol. Mercur. 115, 1066
Consol. M. & S. Co. of Can., Ltd. 248, 249, 281, 479, 676, 778, 874, 1308
Consol. Nickel Co. 1021
Consol. Red Top. 184, 234, 382, 578, 674, 721
See also "Red Top Consol."
Consol. Silver Cobalt Mines, Ltd. 921, 974
Consolidation Coal Co. 629, 715, 721, 775, 1257
—The Merger. 1054, 1063
"Consulting engineer" and question of ethics. 1101, 1201
Consumer, The ultimate. 860
Contract, Power, change, Proposed. *794
Converter-equalizer, Westinghouse. *444
Converters, Copper works, Mt. Morgan. *803
Conveyer, Belt, Novel, Robins. 313
Conveyer system, Copper Queen mines. *542
Conveyer system for disposing of waste, Dobbie. *210
Conveyers—Machine coal mining, Eng. *797
Conveying plant, New Caledonia. *391
Convicts in Ala. coal mines. 327
Conway, Sir W. M. Auriferous alluvials, upper Amazon. 496, 643
Cook, Edward H. 178
Cook, Wm. H. 572
Cooke, R. C. H. Giant mine. 543, 259, 265, 297, 310, 350, 609
Coolbaugh, M. F. 891
Copper, Alaska. 56, *100, 907
Copper, Alaska—Maps. *101, *102
Copper, Algerian mines. 796
Copper, Arizona. 56, 58, 103, 907
PAGE
Copper, Australasia. 124, 814, 681, 764, 852, 907
Copper, bismuth, lead, nitric acid. 938, 947
Copper blast furnace gases, Power from, at Mansfeld. 459
Copper blast furnace, Magnetite in. 962
Copper blast furnace slags, Alumina in. 223, 1012
Copper, Brazil, Bahia. *1029
Copper, Brit. Col. 247, 249, 888
Copper bullion, Gold assay. 465, 569
Copper, California. 56, 121, 907
Copper, Canada. 56, 134, 563, 681, 752, 764, 907
—Correction. 1054
Copper, Cananea Consol. 701
Copper, Cape and Namaqua. 227, 907, 1289
Copper, China. 1280
Copper Cliff, Sampling at. 1283
Copper, Colorado. 56, 105, 907
Copper, Comparison of iodide, cyanide and electrolytic methods for. 159
Copper, Congo region. 475
Copper costs, Burraga mine. 122
Copper, Courtland camp, Ariz. 312, 59
Copper determination—"Hypo" method. 1041
Copper, Diffusivity of. 1272
Copper Eagle, Mont. 279, 349, 382
Copper furnace, Fink. 230, 275, 474
Copper-furnace spout, Life of. 323
Copper, Germany. 681, 764, 852, 907
Copper—Granby mining methods. *252
Copper, Hydrometallurgical extraction. 469
Copper, Idaho. 56, 115, 118, 907
Copper, India. 372
Copper, Italy. 681, 894, 907
Copper, Japan. 91, 681, 764, 907
Copper, Katanga mines. 407, 38
Copper, Lake Sup. dist., with map. *60
Copper—Lawson's new process. 1054, 1212, 1245
Copper market, London, in 1908 and earlier. *57, 58, *73, 165
Copper market, N. Y., in 1908 and earlier. *56, *57, *73, *74
Copper—Matte-separating forehearth. *1232
Copper metallurgy, Jas Douglas on—Avoidance of waste, etc. 1202
Copper, Mex. 56, 59, 127, 681, 764, 907
Copper, Michigan. 56, 60, 907
Copper microstructure examined with new etching agent. *1040
Copper mine, High grade, Chile. 764
"Copper Mining Industry, N. S. W." †35
Copper, Montana. 56, *106, 907, 1251
Copper, Nevada. 56, *119, 120, 907
Copper, N. H. and Vt. 53, 112, 318
Copper, New Jersey mining. 808
Copper, New Mex., in 1908. 56, 109, 907
Copper, North American production, 1908. 56, 681, 764, 907
—Correction. 1054
Copper, N. C. 297
Copper, Ontario. 752
Copper, Ontario, N. W., discovery. 968
Copper, Peru. 126, 681, 764, 907
Copper, Price, in 1908—Lake mines. 1007
Copper, Porphyry mines. 859
Copper precipitation, Claudet on. 398
Copper precipitation from Butte mine water. *953
Copper prices, 24 years—Chart. *57
Copper Producers' Asso. 190, 368, 416, 613, 1008, 1245, 1264
Copper—Pyrite smelting, Knudsen method. *1080
Copper Queen, Ariz. 59, 213, 312, 380, 505, 655, 822, 1147, 1155
—Sconce used. *301
—Historical resumé. 409
—Handling ore at Bisbee. *541
—Avoidance of waste. 1202
Copper, Queensland, mines and smelting—Chillagoe mines, Mt. Morgan, etc. *603, *1125, *635, *802, *746, *838
Copper Range Consol., Mich. *60, 62, 233, 577, 775, 1007
Copper resources, Future. 222
Copper, Rhodesia. 259, 323
Copper River R. R., Alaska. 331
Copper, Rumanian deposits. 796
Copper, Russia. 1054, 907, 681, 764, 1293, 1274
Copper, Situation in. 172, 267, 368, 369, 513, 514, 613
Copper, Smelters' production, in 1908. 56
Copper-smelting, Swansea, Secrecy in. 32
Copper, Speculation in, London. 1199
Copper, "Standard." 375
Copper statistics. 368, 1008, 1245, 1264
Copper statistics for March. 810
Copper, Transvaal. 752
Copper, United Kingdom, and ore. 62, 241, 365, 907
Copper, U. S., in 1908. 51, 56, 681, 764, 1095
—Foreign trade. 336, 365
—Consumption in 1908. 416
—Production, official. 907
Copper, Utah. 56, *113, 907
Copper, Utah, Co.'s operations. 423, *1185
Copper, World's production. 681, 764, 907

PAGE

—Correction. 1054
Copper, Wyoming. 56, 111, 907
Copper sulphate, U. S. 51, 336, 388, 1095
Copperas in 1908. 82, 1095, 1232
Corbin-Clancy Creek Mg. Co. 1258
Corbin Coal & Coke Co. 676
Corbin Consol. Mg. Co. 349, 477
Corbin Cop. Co. 40, 233, 776
Corbin-Wickes Cop. Co. 349, 721, 918, 1110
Cordova Cop. Co. 624
"Cornwall Type, Magnetic Deposits, Penn." †618
Coronado mine, Colo. 477
Corporations, Montana, Reports. 349
Corrigan, Jas., Death of. 174, 178
Corrigan, McKinney & Co. 236, 724
Cosmopolitan C. & C. Co. 627
Cost of diamond drilling for coal. 649
Cost of mining coal, Investigation. 948, *1099
Cost of pig from Lake ores. *739
Cost of silver-lead smelting. 1007
Costs, Battery and cyanide. 696
Costs, Cananea Consol. 702, 704
Costs, Iron-ore mining, Lorraine. *1225
Costs, Klondike mining. 136, 201, 202
Costs, Machine coal mining, Eng. *797
Costs, Milling, Cripple Creek. 957
Costs, Mt. Morgan. *636, *804
Costs, Rhodesia working. 259
Costs, Working, on Rand. 559
Cotton matting furnace. 1021
Cottonwood Coal Co. 587, *847
Cottonwood mine, Nev. 234
Cottrell group, Nev. 478
Couldrey, Paul S. 866
Coupling, Flexible, for rotary blower. *355
Court of Patent Appeals, Proposed. 265
Courtland, Ariz., copper camp. 312, 59
Cowper-Coles electrolytic process. 1147
Cox, Thomas. 621
Crab locomotive in coal mines. 446, 667
"Creele's Calculating Tables." †1149
Cremer, R. Wolf-Bohres lamp. 898
Creosote imports, Increased. 658
Crerar, George. 669
Creswell, H. P. 132
Crimora mine, Va. 1056
Cripple Creek & Colo. 328
Cripple Creek deep-drainage tunnel. 328, 914, 1106, 1254
Cripple Creek dist., Milling. 956
Cripple Creek, Elec. hoisting and pumping. 1057
Cripple Creek in 1908. 104, 232
Cripple Creek Mine Owners' & Op. Asso. 278
Cripple Creek milling situation. 251
Crocker, Herbert S. 1300
Crœsus mine, Idaho. 117
Cronin, James. 1151
Crosby, Walter R., Death of. 178
Crow's Nest Pass Coal Co. 250, 281, 333, 383, 628, 715, 778, 973, 974
Crown Deep, Transvaal. 559
Crown Mines, Ltd. 398, 619
Crown Point Graphite Co. 99
Crown Reef, Transvaal. 29, 131, 132, 398, 619
Crown Reserve mine, Ont. 134, 236, 384, 432, 580, 921, 1269, *1271
Crucible assays. 1243
Cruikshank mine, Calif. 575, 1134
Crushed steel, U. S. 1095, 1077, 1182
Crushers, Granby Co.'s. *255
Crushing device, Hand, Novel. *788
Crystal Consol., Ore. 722
Cuba, Copper. 907
Cullen on gases from explosives. 180
Cullinan diamond. 22
Cullinan on diamond situation. 1240
Culver-Baer Quicksilver Mg. Co. 327
Cumberland Coal Co., N. S. 333
Cumberland Ely, Nev. 185, 280, 383, 366, 776, 873, 1212
—Report. 658
Cumberland Mg. Co., Tenn., Ala. 773
Cumberland mine, Mont. 1064
Curb stock market, New York. *356
Curtis steam-turbine test. *794
Cushman, A. S. Concrete lumber, etc. 421
Cushman on Rustless iron. 1147
Custer camp, Calif. 670
Custodis. Alphons, Chimney Co. *159, *323
Cutler, H. C. 1206
Cyanamide, Calcium. 138
Cyanidation, Notes on—Experiments, settlement, temperature, alkalinity, heat, motion, viscosity, Hendryx agitator-filter, etc. *842
Cyanidation, Progress in. 1194
Cyanide, Ammonia, process. 814, 666
Cyanide and battery costs. 696
Cyanide lixiviation by agitation. *695
Cyanide method for copper. 159
Cyanide mill, Standard Consol. *487
Cyanide mills, Mex., Practice—Table. 696
Cyanide plant, Belliére mines, France. *793
Cyanide mills, Tonopah, Nev. *594
Cyanide plant, Virginia & Mex. *170
Cyanide poisoning, Antidote for. 639
Cyanide tanks, Protective coating. 698
Cyaniding, Direct, on Rand. 883
Cyaniding—Electrolytic precipitation. 705
Cyaniding, Empire mill, Calif. *440
Cyaniding—Filtering gold slime. *902

PAGE

Cyaniding practice at El Oro. *683
Cyaniding—Precip. by soluble sulphides. 841
Cyaniding—Prepairing for leaching. 164
Cyaniding, Rio Plata, Mex. *147
Cyaniding, Slime settling before. *837
Cyaniding, S. D. 113
Cyaniding—Vacuum-filtering improvements. *1004
Cyclone gasolene traction drill. 601
Czermak-Spirak furnace. 141

D

D'Invilliers, E. V., on coke costs. 949
Dahl mine, Wash. 826
Dains, H. H. Magnesite, India. 1075
Daisy Florence, Nev. 37, 40, 184, 329
Dakin copper group, Calif. 717
Dall mine, Wis. 281
Dallas, J. R. 621
Daly, Judge, Utah. 426
—Report. 505
Daly-West, Utah. 276, 325, 474, 717, 1154, 1302
Darwin property, S. C. 1065
Davidson, D. R., C. & C. Co. 281
Davies, James B. 866
Davies, H. W. Tonnage estimation. 642
Davis Coal & Coke Co. 629
Davis Colliery Co. *1284
Davis-Daly, Mont. *106, 525, 674, 718, 820, 824, 1064, 1105, 1258
Davis, V. P. Elec. determination, Nickel. 590
—Gaseous currents in Meyer's tangential chambers. 1033
Davis, Wm. Morris. 572
Davys, M. S. 1206
Dawdon colliery, England. 801
Day, David T. 818
Dayton Coal & Iron Co., Ltd. 1, 4
De Bardeleben, H. F., Jr. 324
De Bavay Co., and process. 124, 213, 954
De Beers Co. 259, 844, 1240
De Gennes, M. Bits for drills. *1183
De Hora, M. H. *991
De Jonge, A. C. Has value of gold depreciated? 666
De Lamar, Nev., Glory-hole mining. *451
De Launay, L. "The World's Gold." 666, †1013
De Laval pulverized-iron furnace. *1145
De Laval's cyclone process. 835
Débris question, Calif. 37, 171, 179, 229, 200, 473, 521, 573, 610, 622, 819, 1152, 1253
Deep Mine, Ltd. 527
Deering Coal Co. 574, 576, 1305
Deerwood, R. R. from Duluth. 721
Del Mar, A. Gravity stamp mills. 890
Delaware & Hudson. 187, 959, 961, 1261
—Report. 858
Delaware, Lack. & West. 187, *508, 776, 959, 1213, 1261
—Report; coal statement. 761
Delprat & Potter flotation process. 772
Denison, Charles L. 572
Dennis, furnace, Blackbutte. 141, 235
Density factors—Tonnage estimation. *640
Denver Consol. Stock Exchange. 586
Denver mint. 1208
Denver office, U. S. Geol. Surv. 892
Dering Coal Co. 868
Descloizite. 519
Desert mill, Nev. *595
Desk for keeping reports clean. *546
Desloge Lead Co. 67
Detinning processes, Utilizing products. 1145
Detonators, Weakness of. 212
Detroit Cop., Ariz. 181, 505, 655, 1108, 1202, 1304
Deutz solid naphthalene engine. 1010
Dewatering cone, Dos Estrellas mill. *684
Dewdney, Hon. Edgar. 1151
Diamantina dist., Minas Geraes. 856
Diamond-bearing highlands, Bahia. *981, *1029
Diamond, Cullinan. 22
Diamond mine explosion, Butte dist. 715
Diamond mine, Pike co., Ark. *152, 371, 616, 870, 963
Diamond mines, New, South Africa. 850
Diamond mines, South African. 1240
Diamonds, Australian discoveries. 1141
Diamonds, British Guiana. 408
Diamonds, Exploding of. 791
Diamonds, Mayer's Prospect. 623
Diamonds, Origin of, and Kimberlite rock. 789
Diamonds, Rhodesia. 259
Diamonds, Transvaal. 523, 796, 844
Diatomaceous. See "Infusorial."
Dick, J. C. 621
Dickson, Archibald A. C. 424
Dickson, William B. 178
Dictionary, Mineral, Proposed. 714
Diffusivity. 1272
Dikes, Effect of, on coal. 801
Diller, J. S., and Ark. diamonds. 371, 616, 963
Dinero tunnel, Colo. 379, 429, 524, 625, 1109

PAGE

Direct vs. alternating current for mine work. *507, 862
Discharge, Neal, for tube mills. *688
Discipline, accidents and economy. 359
Discipline in mines. 224
Discipline, Notes on. 612
Ditches—Hydraulic mining. *28
Dividends, Calif. oil companies, to date. 93
Dividends, by months. 33, 322, 565, 765, 961, 1145
Dividends, Nevada mines, 1908. 118, 179
Dividends of Calif. oil companies. 93, 811
Dividends paid in 1908. 122
Dividends, Transvaal. 132
Dixon, G. R. Mining coal with machines, Eng. *797
Dixon, James T. 1206
Djebel-el-Grefa, Tunis. 475
Dobbie conveyer. *210
Doctor-Jack Pot, Colo. 718, 823, 867, 1060
Doe Run Lead Co. 67
Dolcoath mine, Cornwall. 475, 1275
Dolgelley mine, North Wales. 1275
Dolores, Chichuahua, Mex. 628
Dome Lode Devel. Co. 1159
Dominion Coal Co. 333, 384, 426, 580, 724, 778, 868, 920
Dominion Cop. Co. 249, 479, 826, 973
Dominion Iron & Steel Co. 426, 778, 920, 974
Dominion Nickel Cop. Co. 134
Donaldson, R. J. Tonnage estimation. *640, 1011
Door, Bulk-head, Water-tight. 262
Doors, Fireproof, needed. 300
Dor-Delatre, E. Apparatus for charging zinc retorts. *1272
Dorr, John V. N. 36
—South Dak. mining. 112
Dos Estrellas, El Oro, Mex. *683, 686, 696, 1193
Dos Estrellas, Michoacan, Mex. 282
Douglas, A. H., Death of. 1058
Douglas Cop. Co., Mex. 432
Douglas, James. 32, 274, 858
—Conservation of resources, 515, 1202
—Copper in Ariz. 58
—Historical resumé, Cop. Queen. 409
Douglas, James S. 1151
Dover Boiler Works. *817
Doveton, Godfrey D. 818
Dow, H. H. Separation in solution. 1012
Downs, George F. 274
Draeger apparatus. 1192
Draft, Forced, New system. 906
Drawback regulations on metals. 261, 302
Dreadnought Mg. Co. 1112
Dredge mining, Victoria. 169
Dredges for placer deposits, Development. *833
Dredged ground, Restoring. *946
Dredging and hydraulic mining, Calif. —Débris and other notes. 37, 171, 179, 229, 200, 275, 425, 473, 521, 573, 610, 622, 819, 834, 909, 1152, 1253, 1256
Dredging at Butte. *991
Dredging, Brazilian possibilities, Bahia. *986
Dredging company, Large—Natoma Consol. 258
Dredging conditions, Colombia. 1003
Dredging, etc., Florida phosphates. *490, 667
Dredging, Gold, developments in 1908. 200, 766
Dredging, Gold, properties, Examination. *893
Dredging gold, Russia. 1050
Dredging, Gold, Upper Amazon. 643, 496
Dredging in Russia. 136, 861
Dredging, Klondike, in 1908. 135, 200
Dredging—Oroville Dredging, Ltd. 264, 268
Dredging, Seward peninsula. 201, 251
Drifts, Small, Driving. 225
Drill, Churn, Successful prospecting. 420
Drill, Diamond, Deep hole, Bisbee. 791
Drill diverted over boundary. 652
Drill, Gasolene traction, Cyclone. 601
Drill, Gordon. 372, 549
—Vanadium steel. *468
Drill-hole, Photographing. *854
Drill-holes, Oil extraction from. *1001
Drill, Machine, prospecting, Alaska; spring-pole drill, etc. 592
Drill, Rock, Novel, Siemens-Schückert. *1181
Drill-sharpening device, Calumet & Hecla. *1073
Drill, Stephens Climax Imperial hammer. *857
Drill—Transvaal stope-drill competitions etc. 130, 132, 318, 408, 623, 644, *658, 869, *895
—Surface trials. 998, *1090
Drills, Air and hand—Sinking on Rand. 644
Drills, Air—Tunneling machine. *1298
Drills—Auger, reamers—Injecting concrete. *655
Drills, Limiting size, Indiana. 574, 762
Drills, Piston and hammer, Ways of improving—Stope drilling contest, results of various drills, South Africa; size of bit; loss of power; photos. of hole bottoms showing blunted tools; Konomax drill, etc. *549

PAGE

Drills, Power, Selection and use of bits. *1183
Drills, Rock, Air economy; Konomax drill, etc. *895
Drills, Sharpening underground. 767
Drilling—Approaching old workings. 220, 762
Drilling—Deepest bore hole. 745
Drilling, Diamond, for coal in Penn., Cost of. 649
Drilling—Fast driving on Rand. 495
Drilling—Loading blast holes and driving small drifts. 225
Drilling—Testing placer ground. 223
Drinnan, R. G. 1206
Driving, Fast, on Rand. 495
Dromlac mine, Nev. 824
Drucker, A. E. 866
Dry blast, Gayley, Furnaces using. 469, 1010
Dry blast, New patent. *1242
Dry washer, Rawhide placers. *346
Ducktown Sulphur, Cop. & Iron Co. 216, 723, 825, 885, 886, 1011
Duff, A. W. "Text Book of Physics." †35
Duluth, Missabe & Northern. 606
Dumnarfret iron smelter. 379
Dumps, Tonnage estimation in. 640, 1011
Dunbar, Frank. 324
Duncan, Charles, Death of. 520
Dunn, John W. 376
Duquesne Steel Wks. ore-handling bridge. *944
Durango, Northern, Trip through. *697
Durfee, E. W. 1206
Durfee, J. W. 377
Dusenbury, Walter, Death of. 1058
Dust, Coal. See "Coal."
Dust, Precious-metal, Collecting. *863
Dutch East Indies, Gold. 361
Dwight, Arthur S. 703, 1014
Dwight & Lloyd sintering machine. 1010
Dyer, H. H. 472
Dynamite. See also "Explosive," "Powder," etc.
Dynamite, Burning of. 246
Dynamite, Deterioration of. 965

E

Eagle Ore Co. 915
Eagle River mine, Alaska. 100
Earle, H. Slag-calculating method. 962
Earths, Prices of, in 1908. 82
Earthquakes and colliery explosions. 411, 416, 899, 1197, 222
East Butte mine, Mont. 577, 971, 1015, 1059, 1207
East Helena smelter. 350, 1157
East Rand Proprietary, Ltd. 1283
East Tennessee zinc-mining dist. *401
East Tintic, Utah. 1308
Eastern coal industry in 1908. 90
Eastern Colo. Power Co. 276
Eckel, E. C. Cement industry. 213, †618
Economic law—Steel prices. 461
Economy as related to accidents. 359
Edmundian mine, Rhodesia. 259, 1275
Edson, George C., Death of. 1151
Edwards, R. M., Map by. *61
Edyvean, Allan. 472
Efficiency in administration of public lands of a nation. 1048, 1133
Eight-hour bill, B. C. 475
Eight-hour law, Calif. 715, 771, 966, 1014, 1059, 1097, 1105, 1152, 1207, 1247
Einasleigh cop. mine, Queensland. 1126
El Bote mine, Mex., Milling. *1182
El Cedro mill, Mex. *683, *688
El Dorado Dredging Co. 37
El Dorado-Placer Dredging Co. 1015
El Dorado mine, Allegheny, Calif. 1152, 1207, 1301
El Oro in 1908. 128
El Oro, Milling and cyaniding. *683, 696
El Paso. Consol. 180, 232, 429, 525, 673, 718, 1060
El Salto mill, Ocampo, Mex. *708
Eldorado mine, Rhodesia. 259
Electric cutting machine. *1236
Electric elevators, Klondike. 136, 201
Electric furnace, Heroult, in U. S. 458, 1015, 1024
Electric furnace, Resistance and induction, Iron-smelting, Roechling-Rodenhauser. *364
Electric furnaces for drills. 767
Electric hoists for coal mines. *443
Electric hoisting and pumping, Cripple Creek. 1057
Electric hot plate, Making. 958
Electric mine signaling. *855, *1248
Electric-motor driven centrifugal pump. *404
Electric motors, Washoe concentrator. 643
Electric power, Cost of. 462
Electric power in coal mines, Installation of. 510
Electric power, Wis. zinc-mining dist. 1050
Electric railway, Suspended, Koppel. *836
Electric recorder for watchmen. *454
Electric resistance furnace. *1035
Electric safety lamp, Wolf-Bohres. 898
Electric shocks and fires in mines—N. S. W. collieries. 317
Electric shocks, Note on. 415

PAGE

Electric shot firing in coal mines. *243, 417, 617
Electric shot-firing notes. 220, 314, 462, 512
Electric smelting, Norway, Sweden. 379, 844, 963, 1050
Electric steel process, Bismarckhütte. 1147
Electric steel making—Note. 136
Electrical equipment at Gary. 20
Electrically driven mine pumps. 422, 766
Electrically operated coke squeezers. *647
Electricity applied to coal mining. *507, 862
Electricity, High-voltage, Dangers. 1239
Electricity in collieries. 220, 266, 427, 462, 512, 663, 1096, 1244
—Protecting motors, etc. 906
Electricity in English collieries. 649, 898, 1042
"Electro-Metallurgy. †35
Electrolytic determination, Nickel. 590
Electrolytic lead-antimony process. 891
Electrolytic method for copper. 159
Electrolytic precipitation. 705
Electrolytic production of calcium. 1147
Electrolytic Ref. & Sm. Co. 125, 690
Element, New—Nipporium. 652
Elevators, Electric, in Klondike. 136, 201
Elevators, Hydraulic. 27, 320
Elkhorn Electrometals Co. 430
Elkton Consol. 522, 820
Ellendale dist., Nev. 1258
Ellis, W. H. 1112
Elm River Co., Mich. *62, 1020
Elmore, A. S. Notes on various applications of the Elmore vacuum process. 1275
Elmore process. 38, 216, 124, 219, 1205
Elmore process at Cobar. 177
Elmore process, Hewitt mine, B. C. 250
Ely, Nev.—Robinson dist. map. *119
Ely Amalgamated Cop. Co. 915
Emery, New York. 1273
Emery testing machines. 366, 909
Emily Edith mine, B. C. 676
Emma Cop. Mg. Co. 915
Emma Gordon mine, Okla. 496, 919
Empire mine and mill Calif. 348, *396, *439, 1156
Employers' liability laws, Foreign. 663
Engine, Winding, 3000-h.p., England. *904
Engines, Blowing, Gas, at Gary. 20
"Engineer, Consulting," Ethical question. 1101, 1201
Engineer's lease, Nev. 118, 179, 1229
Engineers Soc. of Penn. 1104, 1300
England. See "United Kingdom."
Engle, W. D. Volumetric determination, Uranium and Vanadium. 155
Engle, Robert H. 866
Enterprise Co., Wis. 973
Enzian, C. Anthracite volumes. 640
Epperson, James. 669, 762, 1060
Equalizing systems for hoists. *443
Ericson, E. J. Lead and cadium determination in spelter. 1036
Erie R. R. coal traffic. 187
Escarpelle, Mines of. *362
Eschweiler Mining Asso. *647, *1189
Esperanza, American, Mg. Co. report. 1005
Ethics, Question of. 1101, 1201
Eudialyte. 548
Eureka, Ariz. 39, 870
Eureka Co., quicksilver, Calif. 892
"Europe, Mining Methods in." †1013
European lead convention. 584
European zinc convention. 68, 221, 368, 436, 570, 714
Evans, J. W. 520
Evans, R. D. 966
Everest, George, Death of. 621
Everson process and others. 38, 216
Evolution mine, Idaho. 183
Examining board, Ind., Proposed. 226
Excavations, Measurement of. *640, 1011
Experiment, Mine, stations, Proposed. 714
Expert advice. 173
Experiment stations—Martin bill. 264
Expert evidence, Question of. 309
Experts, Mining, Bogus. 216
Exploration Co., Ltd. 708
Explosion. See also "Coal dust," proper names, etc.
Explosion, Huge force from primary. 512
Explosion—Isolating mine areas from after-gases. 507
Explosion, Norton Hill colliery. *994
Explosion, West Stanley mine, Eng. 419, 505
Explosions and slag granulation. 1272
Explosions and sun spots. 427
Explosions, Coal-dust, Gt. Brit.—Experiments, reports, legislation, etc. *1084, 1196, 1290
Explosions, Coal-dust, Pulverized shale for prevention of. 11
Explosions, Coal-mine, notes. 266, 512, 566, 906, 952, 1006, 1096, 1290
Explosions, Coal-mine, Views respecting. 12
Explosions, Colliery, Recent, and earthquakes. 222
Explosions, Mine and their cause. 1191
Explosions, Mine, as related to earthquakes. 41, 416, 899, 1197
Explosions, Prussia and England. 965
Explosives, Accidents with, Prevention. 299
Explosives, Flaming, Dangers of. 360

PAGE

Explosives, High, Gases from. 180, 219
Explosives, High, Nature of—Cartridge diameter. 766
Explosives, How to destroy. 566
Explosives, Kansas law. 648
Explosives, Notes on. 314, 766, 415, 952
Explosives, Permissible, List of, U. S. 1190
Explosives — Pittsburg experimental station. 29, 196, 212, 446
Exports, U. S., 1908. 240, 333, 336, 365, 387, 388, 530 1197, 1291
Extraction formulas, Useful. 1241
Eyde, S. Calcium nitrate, Norway. 620

F

Facts disproving recent statements relative to mine fatalities. 12
Fairmont Coal Co. 511, 723, 778, 951, 1063
Fairmont Mg. Machy. Co. *1287, *1289
Falls, Roof, etc., Accidents from. 13, 14, 19, 301, 359
Fan, Sturtevant centrifugal multivane. 757
Fanti Consol.; Prestea Block A. 196, 427
Farah mine, Ont. 1209
Farish, George E. 1014
Farjas, Henri. 811
Faulds, Alexander. 424
Fault, Coal-seam, Approaching. 367
Faulted ground, Shaft sinking through. 215
Faulting, Guanajuato dist. *693
Fay, Albert H. 716
—Barytes in Tenn. 137
Federal Chemical Co. 140
Federal Lead Co. 67, 1009, 1010
Federal M. & S. Co. 63, *115, 183, 275
Feeder, at Davis mine barn. 1287
Feldspar mining, Ontario. 759
Feldspar and quartz, N. Y. 1273
Fergusson, M. Safety and economy. 1303
Ferncliff Slate Co. 1213
Ferreira, Transvaal. 132, 326, 1107
Ferreira Deep, Transvaal. 559
Ferris, J. B. 672
Ferromanganese in 1908. 1095
Fichtel, C. L. C. Lake Sup. cop. dist. *60
—Electric recorder for watchmen. *454
—Calumet & Hecla drill shapener. *1073
Fifty Gold Mines Corp. 718, 970
Fiji islands, Discoveries on. 1243
Filing system for technical papers. 1249
Filter, Oliver, Grass Valley. *440
Filter, Vacuum, treatment improvements. *1004, 1147
Filters, Burt, at El Oro. *683
Filtering gold slime. *902
Findley Consol., Colo. 867
Fink copper furnace. 230, 275, 474
Finlay, J. R. Cost of pig iron from Lake Sup. ores. *739
—Cost of mining coal. 948, *1099
Finn Coal Co. 235
Fire Creek Collieries Co. 973
Fire walls, Temporary, Prussian coal mines. 650
Fires in metal mines, Prevention. 300
Fires, Notes on—Dams. 349, 367
Firedamp. See "Gases."
Firing, Smokeless, Rules for. 1142
First National Cop. See "Balakala."
Fish Lake valley oil, New. 179
Fitch, Walter. 520
Flagstaff Co., Idaho. 183
Flaherty, R. H. 547
Fleming, A. B., on ventilation. 15
Flinn, F. B. Assay of gold in copper bullion. 569, 465
Flint Hill Mg. Co. 1021
Florence Gem lease, Nev. 234
Florence Goldfield, Nev. 37, 40, 118, 179, 234, 574, 919, 1229, *1231, 1306
Florence Annex, Nev. 118, 179, 1229
Florida phosphates, Mining and milling. *490, 667
Florin, J. Surveying bore-hole. *854
Flotation processes. See also "Elmore."
Flotation process litigation—Elmore, etc. 38, 216
Flotation process, Sanders. *844
Flotation processes, Broken Hill. 124, 219
Flottman drill. 549, 869, 998, *1091
Flumes—Hydraulic mining. *28
Fluorspar, Kentucky. 1250
Fluorspar in 1908. 1095
Flux mine, Ariz. 104
Flynn, Edward. 376, 913
Flynn, F. N. 376, 1014
Fog, Emil & Sons. 831
Fohs, F. J. Fluorspar, Ky. 1250
Forehearth, Matte-separating. *1232
Foreign countries, 1908, Mining review. 123
Foreign trade, U. S., 1908. 240, 333, 336, 365, 387, 388, 530, 1184, 1197, 1291
Forest City Co., S. D. 235, 526, 579, 1065
Forest, National, mining decision. 1153
Forest preservation and "concrete lumber." 421
Forest. See also "Land," "Conservation," "Timber."
Forest Service, Attitude of. 1154
Forest Service—Timber preservation. 840
Forests, Devastation of. 1204
Forestry affairs in Colo. 772

PAGE

Forge colliery, England. *1033
Formulas, Useful. 1241
Foster bill for aid of schools. 261
Foster mine, Ont. 282, 921
Foundations, Goldfield Consol. mill. *1173
"Foundry Practice." Tate and Stone. †374
Four Metals M. & S. Co., Calif. 1155
Fox, Arthur C. 1151
Fraleck, E. L. Mining-land taxation. 571
—Death of. 1206
Frames, Ross and W. F. 1240
France, Aluminum coins. 11, 607
France, Coal. 623, 630, 780, 828, 968
France, Coal-company stock prices. 561, 607
France, Coal-dust precautions. 11
France, Coal-mining accidents. 90
France, Coal, Producing cost. 762
France—Colonies' mineral production. 1094
France, Gold and silver movement. 54, 631
France, Gold, Three producing mines. *792, 1061
France, Iron and steel. 62, 387, 909, 1083, 1098, *1221
France, Mining enterprises in. 607
France, Patent legislation. 989
France, Proposed laws. 427
France, Spelter, in 1908. 265
Frances, Mohawk. 179, 473, 719, 867, 967, 1229, *1231
Frank & Caro process. 138
Franklin, Mich. *61, 183, 525, 625, 775, 872, 1007, 1211
Fraser & Chalmers tube mill. 1107
Fraser, L. New coal washery, Mich. *993
—A triangulation station. *1124
Fraser, Norman. 966
Fraser, Persifor, Death of. 818
Freeburn, William C. 376
Freezing in shaft sinking. 615
Freiberg, Silver-lead mining. 987
Freight-rate discriminations, etc., Alleged. 44, 428, 725
Freight rates, Iron and steel. 169
Freight rates, Lake. 48
Freight rates—Lake coal trade. 959
Freight rates, New, Gt. Nor. 1253
Freight rates, Tonopah, etc. 229
Freighting ore with big string teams. 1078
French. See also "France," "Guiana," etc.
French colonies mineral production. 1094
Fremont, J. C., and Verde mine. 560
French, Guiana. See "Guiana."
French Guinea gold deposits. *400
Freight rates, Coal, Lake. 875, 1160
French Laurium Mines Co. *881
Frenier pump, Question regarding. 769
Fresno Magnesite Co. 292
Frick, H. C., Coke Co. 86, 951, 1193
—By-product plant. 373, 321
—York Run plant. *508
Friction as factor in mine. 314
Frictionless Metal Co. 261
Friedman, L. W. Ala. coal in 1908. 86
—Ala. iron market in 1908. 77
Frisco Consol. Mg. Co. 579
Frisco Contact, Utah. 383
Frisco mine, Idaho. 275
—Microstructure of complex ore. *260
Fritz, John. 1252
—Medal awarded to Porter. 818
Froggett, Job, Death of. 913
Fry, S. Coal mining, N. Z. *753
Fuel exhaustion—Proposed substitutes. 415
Fuel question, Calif. 887
Fuel tests, Geol. Survey. 212, 611, †815, 960
Fuller, Edward L., Death of. 324
Fuller, John T. 472
—Diamond mine in Ark. *152, 371, 616, 963
Fuller, Mortimer B. 472
Fullers' earth. 1000
Fulton, C. H. 891
Furbeck, J. Phillips. 376
Furnace. See also "Electric," "Iron," "Héroult," "Dry blast," etc.
Furnace, Blast, C. Brisker on. †815
Furnace, Blast, Copper—Alumina in slags. 223, 1012
Furnace, Blast, Copper, Magnetite in. 962
Furnace, Blast, Oval-section, Middlesborough. *853
Furnace, Blast, Proposed, Johnson's. *864
Furnace, Blast, Gases, Utilizing, at Gary. 20
Furnace calculations—Shape brick. *447
Furnace, Crude-oil burning, Witt. *889
Furnace, Iron, Jones, 168, *1129
Furnace, Knudsen. *1080
Furnace, Oxidizing, for pulverized ores. *1235
Furnace, Pulverized iron, De Laval. *1145
Furnace, Resistance and induction. *364
Furnace, Roasting, Weeks. *1140
Furnace, Silver-lead, at Laurium. *881
Furnace time recorder. *1240
Furnaces active, end of year. 188, 321
Furnaces, Mt. Morgan. *802, *838
Furnaceville Iron Co.'s Dobbie conveyer. *210
Fuse spitter, Suggestion for. 813

G

PAGE

Gage, R. B. Determination of alunite. 1122
Gallagher, James. 36
Gallagher mine, Colo. 182, 232
Gallician-Carpathian Petroleum Co. *1001
Galloway, William. 1085, 1086, 1087, 1290
Garbutt mine, Colo. 820, 823, 1109, 1156
Garcia, J. A. 866
Gardner, W. Handling ore, Copper Queen. *541
Garfield, Utah, Smelting at. 113, 1010
Garneau and Hickey decision. 1153
Garnet—Price, production. 82, 988, 1095
Garnet, N. Y., in 1908. 81, 1273, 1274
Garnett, Herbert. 1014
Garpensberg mine, Sweden. 1275
Garswood Hall colliery, Scotland. 1142
Gary plant, Progress of. 715
Gary, Utilizing blast furnace gases at. 20
Gary, Judge, on costs. 745, 950
—On Tennessee purchase. 860
"Gas, Blue"—German illuminant. 465, 965
Gas-engine plant, Coke-oven. Eschweiler Mg. Co.'s, with Nürnberg engines. *1189
"Gas Engine, The." †815
Gas field, Bottineau, N. D. 1089
Gas, Illuminating, Composition. 1290
Gas, Natural, Canada. 135, 563, 719, 752, 1154
Gas, Natural, Alberta, Waste. 43
Gas, Natural, Mid-Continental. 96, 1254
Gas, Natural, New Mexico. 972
Gas, Natural, New York. 1273, 1274
Gas, Natural, supply, Economics of. 1143
Gas, Natural, Wyoming. 112
Gas, Producer, Carbon dioxide in. 1271
Gas-producer plants, Mexican. 698
Gas, Suction, and application to mining; plant at Threlkeld mines. *1076
Gases, After, Isolating mine areas from. 507
Gases, Blast-furnace, Utilizing, at Gary. 20
Gases, Copper blast-furnace, Power from, at Mansfeld. 459
Gases, Coal-mine, and dust explosions —British study and legislation. *1084
Gases, Coal-mine, notes. 266, 415, 566, 906, 952, 1006, 1096, 1196, 1244, 1290
—Detection with blue lens. 266
—Pieler and Clowes tests. 314
—Testing table; selenium tests. 512
—Telephone tests. 566
—Firing gases, early collieries. 612
Gases from high explosives. 180
Gases in metal mines. 300
Gases, Noxious, Legal status of works producing. 884
Gatch, E. S. 1009
Gate arrangement, Victoria crushers. *255
Gauzes, Lamp, Brass vs. iron. 375
Gay, George E. 966
Gayley, James. 966
Gayley dry blast, Furnaces using. 469, 1010
Gebhardt, G. F. "Steam Power Plant Engineering." †35
Geduld mine, Transvaal. 129
Gelsenkirschener Bergwerks A. G. *1135
Gem-bearing pegmatites, Western Maine. 1127
Gem mine, Humboldt co., Calif. 181
Gems, Mining for, Brazil. 1234
Gems, Nevada, in 1908. 121
General Electric air compressors. 453
Geological Society of London. 669
Geological Survey. See "Survey."
George, G. Bengal coal mining. *555
George, H. C. Appalachian oilfield. 98
—Lima oilfield. 99
George, R. D. Colo. Geol. Survey. 276
—Tungsten, Boulder co. *1055
George's Creek methods—Maximum recovery. *303
Georgia, Coal and coke. 91, 162, 1138
Georgia, Gold, in 1908. 53
Georgia graphite deposit. 504
Gerber Coal Co. *847, 849
German colonies, Mineral riches. 909
German diatomaceaous earth. 938
German Gold and Uranium, Colo. 969
German labor problems. 663
German Uranium Mg. Co. 278
Germany, Coal in. 333, 386, 434, 856, 1244
Germany, Coal-mining accidents. 90, 965
Germany, Copper. 681, 764, 852, 907
Germany—Freiberg—Silver-lead mining. 987
Germany, Gold movement. 54, 388
Germany, Iron and steel. 77, 334, 829, 810, 856, 1098, *1221
Germany, Metal imports and exports. 633
Germany, Mineral production. 852
Germany, Potassium salts. 633, 852
Germany, Zinc. 265, 633, 852
Giant mine, Rhodesia, Ore treatment. 543
—Notes, blanketing, etc. 259, 265, 297, 310, 350, 609
Gibb, Allan. 1206
Gibbons, John F., Death of. 1206
Giberson, Allen. 1301
Gibson, T. W. 1268
—Ontario mining. *133, 547
Gila Cop. Co. 1256
Gillies limit land disposal. 1302

PAGE

Gilt-Edge-Maid, S. D. 113, 722, 873
Gin poles, Sectional. 817
Giroux Consol., Nev. 41, 185, 280, 382, 776
Gitsch, Chas. H. 1252
Glass, Rolla. 520
Glen Ayr Coal Co. 918
Glencoe colliery explosion. 446
Globe Consol., Ariz. 624
Globe, Ariz., shutdowns. 277, 320, 380
Globe, Mich. *62, 233
Globe, S. D. 878
Globe & Phoenix, Rhodesia. 259
—Report. 1179
Globe Refining Co., Ont. 580
Glomrudkollen mines, Norway. 908
Glory-hole mining, De Lamar, Nev. *451
"Go-devil," North Star mine. *397
Gogebic range in 1908. 610, 711
Goggin, F. G. 966
Golconda mine, N. C. 296
Gold Alabama, in 1908. 53
Gold, Alaska, in 1908. 53, 100, 251
Gold, Alaska interior, Placer mining. 591
Gold and copper mine and works, Mt. Morgan. *635, *802, *746, *838
Gold and other minerals, Eastern Siberia. 1034
Gold and silver precipitation by soluble sulphides. 841
Gold and silver, Weighing. 469
Gold and silver, World's production. 1245
Gold, Arizona, in 1908. 53, 103
Gold, Australasia, in 1908. 53, 123, 323, 423, 460, 565, 606, 661, 864, 990, 1098
Gold, Australia, West—State mills. 218
Gold Bank holdings, in 1908. 54
Gold Bar Mg. Co. 120
See also "Bullfrog."
Gold, Brazil. 1030
Gold, Brit. Col. 247, 580
Gold, British Guiana. 408
Gold bullion, Silver determination. 543
Gold, California, in 1908. 53, 121
Gold, Canada, in 1908. 53, 135, 563, 752
Gold Cliff mine, Idaho. 1211
Gold Coast. See "West Africa."
Gold Coin mine, Colo. 1019
Gold, Colombia. 126, 705
Gold, Colorado, in 1908. 53, 104
Gold, Commercial movement, 1908. 54, 239, 286, 388, 631, 990, 1293
Gold-copper bottoms, Refining. 464
Gold cyanidation—Notes; experiments. *842
Gold determination, copper bullion. 465, 569
Gold Dollar Consol. Mg. Co. 718, 871, 1254
Gold dredging. See also "Dredging."
Gold dredging, etc., Upper Amazon. 643, 496
Gold-dredging properties, Examination. *893
Gold, Dutch East Indies. 361
Gold, France, Three producing mines. *792, 1061
Gold, French colonies. 1094
Gold, French Guinea deposits. *400
Gold, Georgia, in 1908. 53
Gold, German statistics. 54, 388, 852
Gold, Goldfield production. 1229
Gold, Has value of, depreciated? 666
Gold Hill Co., Idaho. 183
Gold Hill dist., Alaska. 101
Gold Hill Cop. Mines, N. C. 185
Gold, Idaho. 53, 115, 118
Gold, India. 53, 358, 548, 642, 662, 990, 1041, 1293
Gold Issue Co., Colo. 429
Gold, Japan, China, Korea. 53, 91
Gold King mine, Colo. 1254
Gold, Madagascar. 29, 427, 475
Gold market, Berlin as. 518
Gold, Mexico, in 1908. 53, 127
Gold, Montana. 53, 108
Gold Mtn. dist. Nev. 229
Gold, Nevada. 53, 118, 179, 915, 1229
Gold, New Mex. 53, 109
Gold, N. Y., Adirondacks, "Discovery." 1065
Gold, New Zealand. 123, 297, 323, 565
Gold, North Carolina, in 1908. 53
Gold, North Carolina, Mining progress. *293, 460, *935
Gold nuggets, Atlin camp. 973
Gold ores, Low-grade, Washer for. *935
Gold, Oregon, in 1908. 53
Gold, Philippines, in 1908. 53
Gold production, Conditions of. 174
Gold, Rhodesia. 53, 259, 323, 492, 495, 656
Gold, Rumania, and copper deposits. 796
Gold Run, Calif., débris suits. 37
Gold, Russia. 53, 136, 763, 861, 1034
—Dredging. 1050
Gold, Seward peninsula. 251
Gold, silver and platinum in 1908. 53
Gold slime, Filtering. *902
Gold, South American production. 126
Gold Sovereign, Colo. 182
Gold, South Carolina, in 1908. 53
Gold, South Dakota, in 1908. 53, 112
Gold, Sumatra. 1003
"Gold, The World's." 666, †1013
Gold, Tibit, Forthcoming report. 1184
Gold, Transvaal. 53, 129, 174, 312, 326, 523
—Monthly statistics. 22, 450, 662

PAGE
Gold, Transvaal, Distribution. 990, 1293
Gold, Transvaal mining—Report. 835, 869
Gold, U. S., imports from U. K. 990
Gold, U. S., in 1908. 51, 53, 1095
Gold, Upper Amazon valley. 496
Gold used in the arts. 499
Gold, Utah, in 1908. 53, *113
Gold, Washington, in 1908. 53
Gold, West Af., in 1908. 53, 196, 355, 905, 1005
—Notes. 34, 38, 199, 427, 565, 1061
Gold, World, in 1908. 53, 1245
Gold, Wyo., in 1908. 111
Gold, Yukon. 135, 200, 620, 974
Golden Crest, S. D. 113, 474, 920
Golden Cycle, Colo. 251, 278, 429, 1015, 1301
Golden Gate mine, Grass valley, Calif. 396
Golden Gate mine, Mono Co., Calif. 1256
Golden Reef, Utah. 1065
Golden Reward, S. D. 112, 474, 1259
Golden Star mine, Ariz. 720, 916
Golden Sunbeam mine, Ida. 117
Goldfield and alunitization. 177, 1121
Goldfield and Goldfield district of Nevada—Gold and silver output; dividends; map with locations and list of mines. *1229
Goldfield Consol., Nev. 37, 38, 118, 179, 184, 229, 233, 382, 473, 525, 578, 626, 671, 674, 719, 721, 775, 824, 872, 915, 1208, 1229, *1231, 1255
—Sampling mill. *311
—Report. 373
—Foundations of the mill. *1173
Goldfield in 1908. 118, 179
Goldfield, Number of miners. 1255
Goldfield, Reminiscences of. 441
Goldfield townsite controversy. 1208
Goldfield type ores, Prospecting for. 1121
Goldschmidt Detinning Co. 286
Goldschmidt vs. Vulcan. 830
Goldsmith's iron and vanadium-alloy method. 1035
Goldstein, Selwyn. 1300
Good Road, Ariz. 1018
Goodman machines, Results of. 1052
Goodwin, Ivan E. 866
Goose Creek oil discovery. 95
Gordon drill, The. *372, 468, 549
Gordon, F. W. 1009
Goss' coal tests. 611
Gottsberger, R. Britton. 770
Gowganda camp, Ont. 180, 276, 523, 719, 772, 1302
Gowganda camp, Ont., Impressions. 900, 1050
Gradenwitz, A. Electric furnace. *364
—Elec. operated coal squeezers. *647
—Suspended electric railway. *836
—Ore-transporting railway, Pyrenees. *1119
—Novel rock drill, Siemens-Schückert. *1181
—Coal- and stone-cutting process. *1236
Graham, Maj. J. R., Death of. 1151
Granbery, J. H. Novel stadia rod. *456, 616
Granby Consol., B. C., 249, 715, 723
—Methods of mining orebodies. *252
Granby M. & S. Co. 1009
Grand Central-Mammoth case. 608, 325, 622
Grand Falls chert horizon. *1049
Grand-Hornu signaling system. *855, 1248
Granger, H. W. Choco region, Colombia. 667
Granite company merger, N. C. 1065
Granite Mtn. Cop. Co. 888
Granite tunnel, Colo. 673
Grant, James. 1206
Grant, U. S. 1206
Graphic mine, N. M. 110
Graphite claims, Calif. 380
Graphite, Georgia deposit. 504
Graphite industry, Adirondack. 99
Graphite, New York. 1273, 1274
Graphite, U. S. 1095, 1188
Graphite, World's output. 461
Grass Valley and Nevada Cy., Mining and milling. *396, 439
Grass Valley, Calif., Deep mining. 348
Grasselli Chemical Co. 99
Gray, James. 424
Gray, J. M. 424
Great Bend Diadem, Nev. 478
Gt. Boulder Perseverence. 543
Gt. Britain. See "United Kingdom."
Gt. Cobar, Ltd. 125
Gt. Eastern, Pioche, Nev. 776
Gt. Falls coalfield, Mont. *587
Gt. Falls of the Missouri. *498
Gt. Falls smelter, 506-ft. chimney. *156, *323
Gt. Northern Iron Ore Properties. 918
Gt. Northern Oil, Gas & Pipe Line Co. 1089
Gt. West mine, Colo. 328
Gt. Western Mg. Co., Ariz. 59, 213, 312, 1155
Gt. Western, Hornsilver, Nev. 37, 41, 279, 430, 478, 919, 1020, 1158
Greco, A. Italian copper industries. 894
Greece, Mining in—Note. 1049
Green-Meehan Co., Ont. 921, 974
Greene. See also "Cananea."
Greene-Cananea, Mex. 43, 58, 186, 236, 282, 384, 1308
Greene Concession, Mex. 282
PAGE
Greene Gold-Silver Co. 236, 384, 480, 628, 676, 724
Greenwater Copper Co. 1062
Gregg, David L. 572
Gregory mining dist., Nev. 330
Gréhant, Prof. Ankylostomiasis. 650
Grimshaw, R. Blue gas. 465, 965
—Mineral riches, German colonies. 909
—Automatic switch for inclines. *952
—Smokeless consumption of fuel. 1142
—Tests of life-saving appliances. 1192
Grinder, Sample, Crude, efficient. *990
Griswold, Hiram. 1058
Grizzlies, Construction of. *24
Grondal plant, New, in Sweden. 909
Gronningsater, Anton. 376
Grossmann, H. Nickel in steel. 912
Grutt Balloon Hill lease. 722
Grutt Hill Mint mine, Nev. 478
Guadelupe Consol. Mg. Co. 697
Guanacevi Co., Ltd. *697, 698
Guanacevi Tunnel Co. 1159
Guanajuato dist., Geology of. *691
Guanajuato in 1908. 128
Guanajuato-Jalisco Devel. Co. 974
Guanajuato, Relation to Zacatecas. *1227
Guerrero and its railroads. 869, 1201
Guggenheim Exploration Co. report. 366
Guggenheims and Yukon Gold. 315, 319, 1159
Guggenheims in Missouri. 1009
Guiana, British, Gold; diamonds. 408
Guiana, French, mining. 623, 671, 1094
Guiana Gold Co. 1159
Guinea, French, gold deposits. *400
Guinée, Compagnie Minière de. *400
Gulf Oil & Pipe Line Co. 96
Gulf oilfield. 92, 94
Gulliver, G. H. "Metallic Alloys." †374
Gummite. 257
Gunsolus, F. H. High explosives. 766
Gypsum, Death valley, Calif. 967
Gypsum locations, Calif. 1046
Gypsum, Michigan. 1249
Gypsum, New York. 1273, 1274
Gypsum, Nova Scotia. 947

H

Haanel, Eugene. 379
—Electric smelting in Norway. 963
Haas, F., on explosions, discussed. 12
Haas, Herbert. 324
Hadeland mine, Norway. 1276
Haile gold mine, S. C. 825
Haileybury silver mine, Ont. 214, 921
Haire, Norman W. 1014
Hale, A. H. Tungsten and vanadium. 813
Haley, D. F. Sampling by machine. 862
—Filing technical papers. 1249
Hall, Edgar, on secrecy. 52
—Origin of coal. 177
Hall, H. Coal-dust question, Gt. Brit. *1084, 1196, 1290
Hall, Wm. Frank, Death of. 770
Hall, W. S. Model coal mine, Westphalia. *1135
Hamilton quicksilver mine, Calif. 327
Hammon, W. P. 258, 264, 268
Hammond, John Hays. 258, 275, 324
Hampson, John. 818
Hancock, Mich. *61, 183
Hand-crushing device, Novel. *788
Hand jig in practice. *910
Hand sorting. 1097
Hang-fires, Note on. 314
Hansell, N. V. Grondal plant, Sweden. 909
Harbord, F. W. Air drying. *1242
Hardshell mine, Ariz. 104
Hare, Paul R. 36
Hargrave mine, Ont. 236, 974, 1112
Hargreaves, James. 1252
Harney Peak Tin Mg. Co. 908, 1021
Harqua Hala mine, Ariz. 103
Harrington, D. S. Spraying coal dust. *193, 417
—Electric shot firing. *243, 617
Harris leases, Nev. 330, 478, 971
Harrison, Geo. Scranton addresses. 1238
Harrison Gulch townsite case. 717
Harvey & Wilbraham. 228
Hatch, F. H. 424
—"Text Book of Petrology." †618, †1013
Haulage, Engine plant, Belt mine. *589
Haulage notes. 224, 266, 314, 462, 952, 1006, 1096
Hauling with big string teams. 1078
Havard, F. T. 36
—Mr. Matthewson and smoke case. 562
—Kilker matte-tapping car. *1294
Hawkxhurst, Robert, Jr. 621
Haworth, E. Oil and gas, Mid-Continental field. 96
Hawthorne Lucky Boy. 674
Hayden, Stone & Co. 1199
Hayes, C. Willard. 818
—Mexican oilfields. 1233
Haynes, D. M. 1151
Hazard, Rene. 36
Hazel Goldfield, Nev. 184, 279, 430
Headframe, Mt. Morgan. *748
Headframe, Proper size of. 769
Headwaters Mg. Co. 479
Healey, M. J. 44
PAGE
Health of coal miners. 266
Hearst Oil Syndicate. 676
Hearth, Fore, Matte-separating. *1232
Hecla Co., Idaho. 183, 1063, 1109
Hector mine, Idaho. 183
Hedley, Robert R. 716
Hegeler Bros. 68
Heilborn, W. Nickel in steel. 912
Heinitz colliery, Safety barrier. 1244
Helen mine, Ont. 134, 610
Hell Gate Coal Co. 1020
Helmet. See "Breathing," "Rescue."
Hendra mine, Nev. 120
Hendryx agitator-filter. *842
Henszey, Wm. P., Death of. 716
Hepburn law decision, etc. 959, 961, 1138, 1261
Hercules, Idaho. 1063
Hercules, S. D. 972
Herman Mining Co. 670
Hermon, Joseph. 1206
Héroult electric furnaces. 136
—In United States. 458, 1015, 1024
Hersey, Milton. 966
Herzig, C. S. 1252
Hesse, H. V. Mining methods for maximum coal recovery. *303
Hewitt mine, B. C. 250
Heyl & Patterson bridge, Youngstown. *944
Hicks, G. C., Jr. Rotary blower in smelters. *352
Hidalgo Co., Mex. 628, 974
Hidden Creek Mg. Co. 250
Higgins, E. Iron, Chattanooga dist. *1
—Gt. Falls smelter chimney. *156
—Conveyer system for waste disposal. *210
—Cobalt dist., Ont., Operations. *1267
Highland Mary mine, Ont. 276
Hill, E. A. Barium determination. 814
Hill, R. T. Alunitization. 177, 1121
Hill Top mine, Nev. 626
Hillhouse, James. 376
Hillside Coal & Iron Co. 42, 1307
Hinds Consol., Mex. 384
Hinton, T. Coal-cutting machinery, Eng. 649
—Electric colliery winding, Eng. 898
Hirsch, A., & Sohn. 681
Hirt, Jules H. 572
Hixon, H. W. Met. secret. 963
Hobart, F. Gold and silver production of U. S. 53
—Commercial movement of gold and silver. 54
—Iron and Steel in 1908. 74
—U. S. Steel Corp. 659
Hobart, J. F. "Mill-wrighting." †1013
Hocking Valley railway. 1138
Hofman, H. O. Behavior of calcium sulphate at elevated temperatures with some fluxes. 602, 614
Hoist, Back-balance, Addison's Flat. *198
Hoist—Malacate in Eng. *1033
Hoisting. See also "Rope," etc.
Hoists, Electric, for coal mines. *443
Hoisting—Automatic-dumping skip for vertical shafts; hoisting mine water. *1281
Hoisting, Elec., Cripple Creek. 1057
Hoisting—Skips or buckets? 644
Hoisting accidents, metal mines, Prevention. 298
Hoisting at Copper Queen mines. *541
Hoisting, Colliery, Electric, England. 898
Hoisting engine, 3000-h.p., Eng. *904
Hoisting engines, Superheated steam for. 467
Hoisting, North Star mine. *397
Hoisting notes. 171, 367, 462, 548, 566, 1096
Hoisting—Preventing overwinding. 1150
Hoisting signals. 176, 220, 266, 462
Hoisting speed, British collieries. 224
Hoisting—State laws. 175
Hoisting, Inclined, Reclaiming, at Mine 21. *600
Holden, E. H. Reasons for depression. 518
Holland, T. H., on India. 322, 358, *555, 558
Holman drill. 549, 998
Holmes, E. M. 572
Holmes, J. H. Address at Scranton. 1239
Holston Zinc Co. *401
Homestake, S. D. 42, 112, 235, 331, 474, 579, 627, 777
Hommel, W. Zinc-extraction process. 791
Honerine Extension, Utah. 235, 281, 526
Hooper, H. E. Sampling devices. *218
—Estimation of ash in coke. 899
—Rapid estimation of arsenic. 945
—Alumina in copper-furnace slags. 1012
Hoover, C. C. 649
Hoover, Herbert C. 178, 219, 572, 1206, 1292
—"Principles of Mining." †1149
Hornbeck, McQuistin & Cox. 522
Horner, P. K. 1206
Horsfall, H. A. Mex. in 1908. 126
—R. R. systems, northern Mex. *712
Hosmer, B. C., Coal mining at. 896, 250, 1260
Hostetter, Eugene C. 716
Hot plate, Electric, Making. 958
Houses, Davis Colliery Co.'s. *1286
Houston, Joseph. 1104
Howson, J. W. Copper determination. 159

PAGE

Huber, Chas. F. 228
Hübnerite, Description of. 203, 813
Huddleston, J. M., and Ark. diamonds. *152, 371, 616, 963
Hudson Coal Co. 1261
Hudson Coal & Mg. Co., Ind. 477, 525
Hudson Mine Co., Ind. 1254
Hughes, F. T. C. Assaying silver bullion. 942
Hughes, L. S. Oxidizing furnace for pulverized ores. *1235
Hugo mine, Idaho. 183
Hull-Rust iron mine. 610
Humbug district, Calif. 717, 867
Hundeshagen, L. Auriferous and staniferous tourmaline, Sumatra. 1003
Hunt, F. F. Determination of gold in copper bullion. 465, 569
Hunter, H. 324
Huntley, Robert. 572
Huntziker, Frank. 1151
Hutchin, H. W. Tin-ore dressing. 651
—Tungstic-acid determination. 1141
Hutchins, J. P. South America. 126
—Klondike dist. in 1908. 135
—Gold dredging devel. in 1908. 200, 766
—Seward peninsula in 1908. 251
—Churn-drill prospecting. 420
Hutchinson, R. Slag granulation and explosions. 1272
Hyatt roller bearings on slag car. *204
Hydraulic mine, Examining and fitting up. *23, 320
Hydraulic mining bill. 171, 610
Hydraulic mining cartridge. 769
Hydraulic mining in Calif. 610
Hydraulic mining, Klondike. 136
Hydraulic-mining débris affairs. See "Dredging and hydraulic."
Hydraulic sluicing, Addison's Flat. *198
Hydraulic sluicing, Victoria. 169
Hyland mine, Ont. 384
Hyman, David H. 275
Hymera Coal Mg. Co. 1016
Hyve. Swinging chutes. *362

I

Ibex Mg. Co. 524, 1108
Idaho Consol. 117
Idaho, Coal. 118, 162
Idaho, Copper. 56, 115, 118, 907
Idaho, Gold, in 1908. 53, 115, 118
Idaho, Lead, in 1908. 118, 763
Idaho-Maryland mine, Calif. 348, 396, *439, 1015
Idaho mining in 1908. *115, 200, 1063
Idaho, Silver, in 1908. 54, *115, 118
Idaho Sm. & Ref. Co. and Panhandle smelter. 673, 867, 964, 970, 1059, 1207, 1253
Idaho, Zinc ore, in 1908. 465
Ikeda mine, B. C. 973
Ilgner equalizing system. *443
Illinois, Coal and coke. 87, 91, 162
Illinois Coal Operators' Asso. 278
Illinois Fuel Conference. 572, 1191
Illinois, Iron and steel. 321, 562
Illinois mine, Nev. 41
Illinois, Petroleum. 92, 93
Illinois, Spelter, in 1908. 69
Illinois, University of. 1271
Ilmenite. 10
Imbert, A. H. Zinc-extraction process. 791
Imperial Cop. Co. 181
Imperial, S. D. 112, 972, 1065
Imports, U. S., 1908. 240, 333, 336, 365, 387, 388, 1197, 1291
Incorporation of companies in Mex. 268
Indé, Mex., Mines of. 697
Independence mine, Ida. 117
Independent Fertilizer Co. 139
Independent Phosphate Co. 139, 140
Index number for 1908. 960
Indexing filed technical articles. 1249
India, Coal. *555, 558
India, Copper. 372
India, Gold. 53, 358, 548, 642, 662, 990, 1041, 1293
India, Iron industry. 358
India, Magnesite. 1075
India, Mineral concessions in. 322
India, Silver purchases. 217
India, Southern, Manganese deposits. 955
India, Wolframite, Mica, etc. 99 855, 894
Indian mint, Assaying silver bullion. 942
Indiana, Coal. 87, 91, 162, 663
Indiana coal-mining situation. 762
Indiana Coal Operators' Asso. 678, 721
Indiana Engineering Society. 228
Indiana Gold Dredging Co. 179, 275, 1253, 1256
Indiana, Iron-ore mining. 87
Indiana laws. 87, 226, 326, 379, 530, 512, 574, 762, 1060, 1106
Indiana, Peat. 1196
Indiana, Petroleum. 92, 99
Indiana, Relief appliances in. 721
Indiana Sou. Coal Co.; Sou. Ind. Coal Co. 625, 772, 876, 1019, 1024
Indiana Steel Co. 20, 715, 1016
Indo-China production. 1094

PAGE

"Industrie des Metaux Secondaires et des Terres Rares." †618
Infusorial earth, German. 938
Infusorial earth, Market for. 769
Ingalls, W. R., Ore specimens sent by. *260
—Spelter statistics for 1908. 465
—Has value of gold depreciated? 666
—Prevention of mine accidents. 1249
Ingalls Zinc Co. 402
Ingersoll drill. 549, 623
Inland Oil Co. 276
Innoko dist., Alaska. 100
Inspector, Mining, Calif. 325, 489, 521, 522
Inspector, Mining—S. D. law. 175
Inspectors, Appointing power, Penn. 722
Inspectors', Mine, Institute, Proceedings. 1238
Inspiration mine, Ariz. 870, 1018, 1155
Institution of Mg. Engineers. 228, 1303
Institution of Mg. & Met. 651, 837, 818, 858, 955, 1014
Instituto Mex. de Minas y Met. 669, 772, 992, 1303
Intercolonial Coal Co. 333
Intermountain Mg. Co., Ltd., Ore. 578
Intermountain mine, Nev. 234
International Acetylene Asso. 272
International Coal Co. *846
International Congress App. Chem. 1194
International Conservation Conference. 466
International Gold Mines Co. 331, 1214
International Lead Co. 1026
International Lime Co. 1066
International Nickel Co. report. 1145
International Portland Cement Co. 528
International Sm. & Ref. Co. 33, 113, 230, 282, 325, 425, 573, 723, 765, 777, 820, 821, 825, 860, 1016, 1060, 1254
Interstate Light & Power Co. 1050
Inverness Coal Co. 333
Investments, Mines as. 1193
Inyo Development Co. 717
Inyo Mines Syndicate. 380
Iodide method for copper comparison. 159
Iola mine, N. C. 185, *294, 295, 1110
Iowa, Coal. 87, 91, 162
Iowa Engineering Society. 228
Iowa-Tiger Leasing Co. 1153
Ireland, C. B. 1300
Iron, Alabama, in 1908. 189, 321
Iron, Alabama market in 1908. 77
Iron and Steel industry of 1908. *74
Iron and Steel Institute. †618, 1147, 853
Iron and steel markets, 1908. 77
Iron and Steel, Railroad rates. 169
Iron and steel tariff. 30 164, 227, 609, 615, 617, 661, 662, 665, 709, 768, 809
Iron and steel trades—Note. 1054
Iron and vanadium alloys, Laboratory methods for making. *1035
Iron, Australasia. 129
Iron, Austria-Hungary. 1098
Iron, Belgium. 1098, *1221
Iron Blossom mine, Utah. 474, 573, 675, 825, 1213, 1302
Iron bounties, Australian. 611
Iron, Brit. Col. 247, 250, 888
Iron, Calif., Minarets section. 717
Iron, Canada, and steel. 134, 334, 563, 610, 711, 752, 1098, 1217
Iron-cerium-lanthanum alloy. 217
Iron, Chattanooga dist. operations. *1
Iron, Chrome, in Calif. 473
Iron deposit, Calif. desert region. *785
iron, Drawback on. 261
Iron, Electric furnaces, Heroult, in U. S. 458, 1015, 1024
Iron, Electric furnaces Kjellin and Roechling-Rodenhauser. *364
Iron, Electric smelting, Sweden, Norway. 379, 844, 963, 1050
Iron, France, and steel. 62, 387, 909, 1098, *1221
Iron, France, Briey basin ores. 1083, *1221
Iron furnace, C. Brisker on. †815
Iron furnace, Oval section. *853
Iron furnaces in blast. 188, 321
Iron, Germany, and steel. 77, 334, 829, 810, 856, 1098, *1221
Iron, India. 358
Iron, Indiana mining. 87
Iron, Italy, and steel and ore. 285, 1098
Iron manufacture — Advances; economy. 1204
Iron market, and steel, Pittsburg. 78
Iron market, Chicago in 1908. 78
Iron markets, Seaboard in 1908. 80
Iron, Mex., and steel. 127
Iron mines, Tunis. 475
Iron miners, Pensions for. 1242
Iron, Minnesota assessments. 619
Iron Mountain Tunnel Co. 577
Iron, New Mex., in 1908. 109
Iron, N. Y., and ore. 321, 1273
Iron, Ontario deposits and industry. 547
Iron, Ontario production. 752
Iron ore, Clinton, N. Y.—Waste conveyer. *210
Iron ore in 1908. 75, 387, 1192
Iron ore loading time, Record. 1243
Iron ore, N. S. W. 349
Iron ore, Oolithic, Lorraine deposits. *1221
Iron-ore reserves of world. 812

PAGE

Iron ore, Lake, Traffic. 45, 48, 75, 606, 610, 711, 767
—Shipments, prices, freights, past years. 807, 854, 859
Iron-ore volume removed, Computing tonnage from. *350
Iron ores, Lake, Prices of. 1144
Iron ores, "Step" process for. 168, *1129
Iron oxide, Magnetic, in matte. 1195
Iron, Pig, compared with gold. 666
Iron, Pig, from Lake Sup. ores, Cost of; operations of U. S. Steel Corp.; map of transport routes, etc. *739
Iron prices. See also "Prices."
Iron prices in 1908. *74
Iron prices, 24 years—Chart. *57
Iron, Pulverized, furnace, De Laval. *1145
Iron, Russia. 1098
Iron, Rustless. 1147
Iron Silver, Colo. 774, 823, 1019
Iron, Spain. 453, 1098
Iron Springs Placer Mg. Co. 1153
Iron, Sweden. 1098
Iron, Sweden—Grondal plant. 909
Iron, Texas deposits. 478
Iron—Ton—Net or gross? 1083, 1192
Iron, Transvaal deposits. 788
Iron, United Kingdom, and steel. 77. 896, 977, 1098, 1176
Iron, United Kingdom—Trade. 222, 285
—Scotch production; consumption. 239
Iron, U. S., and steel and ore. 51, *74, 321, 333, 370, 418, 530, 562, 614, 810, 1095, 1098, 1192
—Foreign trade. 387, 1184
—Scrap consumption. 911
—U. S. Steel Corp. report. 659, 664, 903
—Bureaucratic intelligence. 506
—Raw material handled. 808
—Finished iron and steel. 1114, 1148
—Pig iron classification. 1095
Iron, Va., and ore. 321, 1247
Iron, Wyo. 111
Iron pyrites, Canada. 135
Iron pyrites, United Kingdom, 1907. 122
Iron, World's pig production. 1098
Irondyke mine, Ore. 579
Irvinebank Mg. Co., Queensland. 1092
Irving, J. D. Technical education. 515
Isabella Co. 381, 1254
Isabella Coal & Coke Co. 964
Isabella-Connellsville Coke Co. 776, 964
Island Copper, Mich. 625, 674
Isle Royale, Mich. *62, 674, 823, 1007
Israelsohn & Co. 761
It Mining Co. 100
Italy, Antimony mines. 844
Italy, Copper. 681, 907
Italy, Copper industries. 894
Italy, Iron, steel, ore. 285, 1098
Italy, Mercury in. 1242
Italian asphalt. 497
Iveagh, Lord. 1293
Ives, G. P. Jamesonite ore treatment. 891

J

Jack Pot mine, Nev. *291
Jackling, D. C. 325
—Operations of Utah Cop. Co. during 1908. *1185
Jackson, Geo., monument, Calif. 1015
Jackson iron mine. 711
Jacobs, E. Brit. Col. in 1908. 247
—Matte-separating forehearth. *1232
Jacobs Exploration Co. 43
Jager, O. E. Furnace time recorder. *1240
James, A. Progress in cyanidation. 1194
James, J. Stanley, Death of. 274
Jamesonite ores, Treatment of. 891
Janin, Louis, Jr. 1058
Japan, Aluminum in. 1289
Japan, Copper. 91, 681, 764, 907
Japan, Gold. 53, 91
Japan. Mineral output. 91
Japanese purchases of oil. 93
Japanese, Turmoil against the. 418
Jefferson Iron Co. 1065
Jefferson Lime Co. 1157
Jeffrey crab locomotive. 446, 667
Jeffrey, W. H. 966
Jene, H. L. 274
—Hand-crushing device. *788
Jensen, E. Filtering gold slime. *902
Jib coal-cutting machines. 1042
Jig and classifier, Richards pulsator. 544
Jig, Hand, in practice. *910
Jim Butler mine, Nev. *594, 626
Jo Dandy Mg. Co. 914
Jochamowitz, S. Vanadium, Peru. 996
Johnnie Consol., Nev. 872
Johns-Manville "Leak-No." 400
Johnson, C. M. Analysis of Steels, etc. †815
Johnson, H. H. Direct cyaniding. 883
Johnson, J. A. 717
Johnson, J. E., Jr. 818
—Improved mine-car wheel 1180
Johnson blast furnace. *864
Jolly Farm mine, Tenn. *401, 403
Jones, B. Franklin, Death of. 228
Jones, C. C. Phosphate-land withdrawal. 317
—Iron deposit, Calif. desert. *785

PAGE
Jones, E. M. Coal mining as investment. 863
Jones, H. Irving. 274, 1058
Jones, J. D. Coal, Colo., in 1908. 86
Jones, J. H. Eastern coal industry in 1908. 90
Jones, J. T., iron furnaces. 168, *1129
Jones, L. H. 572
Jones, Thomas, Death of. 324
Joplin. See also "Missouri," etc.
Joplin dist., Lead and zinc. 69, *73, 191, 763
Joplin dist. Sheet-ore mining. *942
Joplin dist., Spelter. 67, 465
Joplin zinc belt, Migrations of. *1049
Jordan, F. A. 621
Judd, Edward K. 178
Juessen, Edmund. 716
Jumbo mine, Alaska. 100
Jumbo Plaster Co. 973
Jumpers mine, Transvaal. 132
Jumpers Deep, Transvaal. 559
Justi, Herman, Death of. 174, 178
Justice's Find. 197

K

Kafir boom, London's. 1283
Kanawha Collieries Co. 778
Kansanshi mine. 38, 407
Kansas Cy., Mex. & Orient. *712
Kansas, Coal. 91, 162, 237, 725
Kansas mining-safety laws. 176
—Coal-mine legislation. 648
Kansas Nat. Gas Co. 97, 98
Kansas, Petroleum and gas. 92, 96
Kansas, Zinc and lead. 69, 71, 465, 763
Karns tunneling machine. 297
Katanga, Copper mines of. 407, 38
Katsura, B. 770
Keane Wonder mine, Calif. 819, 867, 967
Keating Gold Mg. Co. 184, 329, 349, 430
Keedy's album for mill products. 1010
Keefer, W. W. 1151
Keeley mine, Ont. 214
Kef Oum Theboul mine. 796
Keighley, Fred. C. 280
—West. Penn. coal mining methods. 511
Keith, Frank A. 324, 424
Keith, W. S. 1014
Keller, William Henry. 866
Kellerschon, J. 99
Kelly mine, N. M. 110
Kelly Sm. & Ref. Co. See "Alta."
Kelso, Calif., Iron deposit near. *785
Kelvin-Calumet, Ariz. 277, 720
Kemp, J. F. New plan, university development. 553
Kennedy Creek Coal & Coke Co. 329
Kennedy, J. E. Zinc, Wis. 72
—Laws and leases, Wis. zinc dist. 861
Kennedy mine, Calif. 624
Kenora Prosp. & Mine Owners' Asso. 236
Kenosha mine, Calif. 1105
Kent coalfield, England. 910
Kent, Robert Thurston. 669
Kentucky, Coal and coke. 91, 162, 283, 1250
Kentucky, Iron, in 1908. 321
Kentucky, Petroleum. 92
Kentucky, Production of various minerals in, during 1908. 1250
Kerns leases. See "Rawhide Queen."
Kerr Lake mine, Ont. 580, 921, 1112, 1260, 1268
Kerr, Mark B. 228
Kerr, Victor. 1151
Kershaw, J. B. C. "Electro-Metallurgy." †35
Keta-Loen mine, Celebes. 361
"Ketchikan Dist., Alaska." †35
Ketchum, Milo S. 1300
Keweenaw, Mich. *60, 183, 721, 775, 1211
Keyes, C. R. Locus of vadose ore deposition. 857
—Migrations of Joplin zinc belt. *1049
Keyes, Dr., on Joplin dist. 68
Keystone Co., Calif. 1152
Keystone mine, Ind. 1063, 1109, 1305
Kid drill. 549
Kidder, F. E. "Building Construction." †1149
Kiddle, Thomas. 1058
Kilborn & Weber, Mont. *846, 848
Kilker matte-tapping car. *1294
Kimber drill. 549
Kimberlite rock and origin of diamonds. 789
Kimberly-Montana Gold Mg. Co. 967, 1059
King Edward mine, Ont. 1209, 1214, 1255
King-Philip mine, Idaho. 673
King Phillip mine, Mich. *62, 233, 382
King, W. F. 1014
Kingston Coal Co. 1307
Kjellin and other furnaces. *364
Klepetko, Frank. 818
Kloman mine, Mich. 721
Klondike dist. in 1908; dredging, etc. 135, 200
Knight, Jesse. 115, 331, 573, 675, 717
Knights Deep. 132, 164
Knox, Oscar A. 1104
Knoxville zinc belt. *402
Knowlton, H. S. Publicity in buying equipment. 1146
Knudsen, E. 1104
—Pyrite-smelting method, Norway. *1080, 602
Koch, W. E. Tex. mining. 110
Koepel, Edward. 913
Koerting spray system. 663
Komata Reefs mine. 650
Koniah mines, Asia Minor. 141
Konomax drills. 549, *550, *552, *895, 999, *1090
Koorboora tinfield, Queensland. 1093
Kootenay Belle, B. C. 479
Kootenay Devel. Co. 723, 826
Koppel suspended electric railway. *836
Koyukuk dist., Alaska. 591, 593
Kroumirie mines, Tunis. 475
Kuderer's table of water gages. 1139
Kümmel, H. B. Zinc mining, N. J. 11
—Copper mining, N. J. 808
Kunkle, A. 228
Kunz, G. F. Diamond mine, Ark. 963
Kyshtim Mining Works. 1274

L

La France, D. G. & Co. 431
La France, Mont. 59, *106, 108
La Gloria mine, Mex. *990
La Leonesa mine, Nicaragua. 1292
La Luz, Mex., Geology of. *691
La Rose, Ont. 43, 282, 432, 580, 826, 921, 1022, 1112, 1214, 1268, *1270
Laanglaagte Deep, Transvaal. 559
Labor. See also "Wages," "Laws."
Labor affairs, Coal-mining. 83, 90, 226, 365, 405, 414, 423, 513, 615, 710, 715, 762, 764, 811, 871, 908, 964
Labor, Broken Hill, question. 1226, 1246, 816
Labor, Conserving. 561
Labor cost in coal mining. 948, *1099
Labor, Cost of, and tariff. 316
Labor efficiency and Steel Corp. 709
Labor, German problems. 663
Labor law, 9-hour, Austria. 1052
Labor, Montana coal mines. *849
Labor, Proofs of—Calif. bill. 715
Labor, Rhodesia. 259
Labor, Transvaal. 130, 132, 312
Labor, Transvaal, and accidents. 562
Labor, Transvaal, Chinese and negro. 463
Labor trouble, Mo. 1020
Lackawanna Chemical Society. 1151
Lackawanna Coal & Land Co. 723
Ladd, Geo. E. 36
Ladd & Baker, Inc. 324
Lafayette Slate Co. 1021
Lahmeyer motors on coke squeezers. *647
Laing, John. 36
Lake bed, Meandered, case, Minn. 1064
Lake coal rates. 875, 1160
Lake coal trade—Freight-rate study. 959
Lake coal traffic. 44, 48, 90
Lake freight rates. 48
Lake iron-ore traffic. 45, 48, 606, 610, 711
Lake mine, Mich. *62, 673, 1019, 1109
Lake Shore Gold Mg. Co. 378, 622
Lake Sup. cop. dist., with map. *60
Lake Sup. Corp. 333, 386, 528, 920
Lake Sup. iron ores. 75, 610, 711, 767
—Shipments, prices, freights, past years. 807, 854, 889
—Prices. 1144
Lake Sup. ores, Cost of pig from; operations of U. S. Steel Corp; map of transport routes, etc. *739
Lakes, Arthur, Jr. 274
Lamb, Mark. R. 324
—Va. & Mex. cyanide plant. *170
—Reminiscences of Goldfield. 441
—Practice, Mex. cyanide mills. 696
—Electrolytic precipitation. 705
—The Chile mill. *1182
Lamp oil, Miners', Testing of. 511
Lamp, Safety, gauzes, Brass vs. iron. 375
Lamp—Sconce for candle. *301
Lamps, Acetylene, underground. 177, 272
Lamp, Elec., safety, Wolf-Bohres. 898
Lamps, Portable electric. 427
Lamps, Safety, in foreign coal mines. 196
Lamps—Test table; selenium test. 512
Lamps, Various notes. 220, 266, 314, 566, 906
Land. See also "Forest," "Coal," "Conservation."
Land, Coal, etc., suits, Western. 38, 378, 771, 819, 914, 1207
Land, Coal locations, Mondell bill. 406
Lands, Calif., oil and asphalt. 1233
Lands, Coal, North Dakota. 765
Lands, Coal Public, Pricing. 1137
Lands, Mineral, survey bill. 171, 226
Lands, Phosphate—Disposal; withdrawal. 265, 317, 406, 505
Lands, Public, of a nation, Efficiency in administration—Australasian leases, etc. 1048, 1133
Lane, Alfred C. 1282
Lang-Hassett Syndicate. 724
Langerman, J. J. S. 835
Lanyon-Starr Smelting Co. 782
Lanyon Zinc Co. 879
Laureau, Louis G., Death of. 1252
Larison, E. L. Magnetic oxide in matte. 1195
Lassen Mg. Co., Calif. 1105
Last Chance mine, Idaho. 183, 1063
Last Chance, Lordsburg, H. M. 890
Last Chance, Mogollons, N. M. 109, 110
Launders—Restoring dredged ground. *946
Laurium Silver-lead smelting. *881
Law, E. F. "Alloys." †1149
Law, Frank. 276
Laws, Mining, etc. See also "Tax," "Tariff."
—Arizona. 1198
—Australasia, Mineral lands. 1048, 1133
—Brazil, Bahia. *1032
—B. C., 8-hour, etc. 475
—Calif. 325, 473, 489, 521, 522, 573, 622, 670, 715, 771, 819, 966, 1014, 1059, 1097, 1105, 1152, 1207, 1247
—Coal-mine-laws, Proposed. 568
—Employers' liability abroad. 663
—French mining law. 427
—Garneau and Hickey decision. 1153
—Hepburn, decision, etc. 959, 961, 1138, 1261
—Indiana. 87, 226, 326, 379, 530, 512, 574, 762, 1060
—Kansas, Coal-mining. 648, 176
—Mexico. 131, 690, 694, 821, 1017, 1055, 1209
—Mining law, Short talks on. 597, 639
—Mining laws in Congress—Hydraulicking; relief of applicants for surveys; aid to State mining schools; experiment stations; mineral lands; phosphates; mill sites; surface rights of coal entrymen; Bureau of Mines; dictionary; Calif. oil and asphalt lands, etc. 171, 226, 261, 264, 265, 406, 399, 505, 517, 519, 558, 608, 610, 619, 714, 765, 1233
—Mining-safety, S. D., Calif., Wasn., Kan. 175
—Proposals for codes. 1198, 1249
—Nevada. 377, 719
—Norway, amended mining law. 1091
—Ohio inspectors' rules. 663
—Ontario mining flotations. 276, 522
—Ontario mining accidents. 719
—Penn. 91, 220, 316, 722, 612
—Quebec. 1046, 1201
—Silver Shield patent ruling. 1106
—Status of works producing noxious gases. 884
—Transvaal. 132
—United Kingdom, Colliery. 1088
—Utah. *194, *245, 715
—Victoria, Australia. 5, 11
—Wis. zinc dist. 861
Lawson mine, Ont. 1209, *1271
Lawson, T. W.—New process, etc. 1054, 1212, 1245
Lay and electrolytic precipitation. 705
Le Roi mine, B. C. 250, 723
Le Roi No. 2, B. C. 250, 580, 1308
—Report. 892
Leach, F. A. Gold estimate. 53
Leach, W. W. 1058
Leaching. See also "Lixiviation." "Cyanidation."
Leaching, Preparing sand for. 164
Leaching tailings at Butte. *954
Lead affected by low silver price. 32
Lead and ore market and prices, in 1908. *63, 64, 71, *74, 191
Lead and ore tariff. 30, 164, 183, 609, 615, 617, 622, 661, 662, 665, 670, 768, 809, 772
Lead, Diffusivity of. 1272
Lead and spelter production in 1908. 63, 763
Lead, Ariz. 104, 763
Lead, Australasia. 123
Lead, Brit. Col. 247, 248, 580
Lead, Canada, in 1908. 563
Lead, Canadian bounty. 249, 1022
Lead, Colo., in 1908. 105, 763
Lead, Diffusivity of. 1272
Lead, European convention. 584
Lead, Gt. Brit., foreign trade. 241
Lead, Idaho, in 1908. 118, 763
Lead—Jamesonite ore treatment. 891
Lead, Joplin dist., in 1908. 69, 763
Lead, Kansas, in 1908. 71, 763
Lead market, London, in 1908. *57, *63, 167
Lead, Mex., in 1908. 127
Lead, Missouri. 64, 65, 69, 71, 763
Lead, Mo., S. E.—Map. *66
Lead, Nevada, in 1908. 120, 763
Lead, N. M., in 1908. 110, 763
Lead, Oklahoma. 70, 496, 763
Lead and cadmium determination in spelter. 1036
Lead ores, Difficult, Concentrating, at Broken Hill. 939
Lead, Peroxide method for determining. 262
Lead poisoning—Water spraying. 177
Lead prices, 24 years—Chart. *57
Lead, Queensland, mines and smelting. *603, *1125
Lead, Silver, smelting, at Laurium. *881
Lead, Silver, Smelting, Cost. 1007
Lead, Silver, smelting, East Helena. 350
Lead, Silver, mining, Freiberg, Germamany. 987
Lead-smelting works, Colo. 33

PAGE

Lead, U. S., in 1908. 51, *63, 763, 1095
—Foreign trade. 336
—Consumption in 1908. 1197, 1291
Lead, White, etc. 51, 64, 82, 1095, 1201
Leadville mine, Ariz. 213, 372, 916
"Leak-No." 400
Lease system, Wis. zinc dist. 861
Leasing, Mineral, Australasian. 1133, 1048
Leases of phosphate lands. 265, 317, 406, 505
Lecompton mine, Calif. 575, 672, 1256
Ledoux, A. R. 908
Lee, Rector L. 866
Leeds, Lieut. Chas. L. 1253
Lees, J. H. Coal, Ia., in 1908. 87
Lefevre, S. L. Computing tonnage *350
Legislation. See "Laws," State names, etc.
Lehigh Coal & Nav. Co. report. 1051
Lehigh Valley Coal Co. 266
Lehigh Valley R. R. Co. 44, 187
Leinweber oil-extraction system. *1001
Leiter mine, Ill. 320, 505, 899
Leith, C. K. Iron deposits, Utah. 785
Lena Gold Mg. Co. 764
Leona Chemical Co. 229
Léonino, Baron. 792
Leroy, O. E. Coast dist., B. C. 888
Lestelle and Hyve. Swinging chutes. *362
Lewis, D. O. Rustless iron. 1147
Lewis, J. V. Prospecting for ores of Goldfield type. 1121
Lewis, R. Allyn. 572
Lewis, Thomas L. 226, 324, 365, 405, 414, 423, 615, 1153
Lewis, Sir W. Thomas. 1058
Lewisohn, Frederick. 520
Lewisohn, Walter. 274, 324
Lewisohn interests, Mont., in 1908. 108
Leyson, B. 1300
Liberty Bell, G. M. Co., Ga. 477
Liberty Bell mine, Colo. 326, 1057
Lick Branch explosions. 171, 186, 222, 267, 899
—Relief fund. 667
Life-saving appliances, Tests of. 1192
Lightning protection, Smelter chimney. *157
Lightning strikes over magnetite. 800
Lima oilfield. 92, 99
Limestone, Brazil. *1031
Limestone, U. S., in 1908. 51, 76, 1095
Limestone quarry, Rockwood. *3
Lindgren, Waldemar. 889
Lindsay, G. W. Diamantina dist. 856
Link-Belt coal washery. *993
Lipman, Chas. K. 1104
Lista Blanca Cop. Co. 480
Litharge, U. S., in 1908. 1095, 1201
Little, A. D. Sulphur in gas coal. 897
Little Bell mine, Utah. 325
Little Chief Consol. Mg. Co. 522
Little Florence, Nev. 118, 179, 230, 330, 430, 526, 578, 1229, *1231
Little Nipissing, Ont. 384, 778, 1066, 1214
Little Princess, Mo. 477
Little Rock Packet Co. 624
Little Wonder drill. 549
Livingstone, R. 966
Livingstone mine, Colo. 671
Lixiviation. See also "Leaching," "Cyanidation."
Lixiviation, Cyanide, by agitation. *695
Loading blast holes. 225
Lob, Fritz. 570
Locating claims in Mexico. 694
Locations—Proposed Calif law. 715
Locomotive coal tests, Goss'. 611
Locomotive, Crab, Jeffrey. 446, 667
Locomotive, Electric, suspended, Koppel. *836
Locomotives, Air, Coupled. 367
Locomotives, Oil-burning. 266
Lombois, J. Sinking in wet ground, injecting concrete. *653
London markets. See names of metals and "United Kingdom."
Londres, Cia. Minera. 580
Long Beach Asbestos Mg. Co. 231, 967
Long Year Lake mine, Minn. 1064
Longwall system on Continent. 1006
Lorain Coal & Dock Co. 722
Lordsburg dist., N. M., mines. 890
Lorraine coalfield, France. 623
Lorraine deposits, oolithic iron ore. *1221
Lorraine, South, Ont., dist. 214
Los Lamentos mine, Mex. 489, 528
Lost Valley Coal Co. 280
Louisiana, Petroleum. 92, 94, 232
Louttit, Henry P. 178
Lovedale mine. 790
Loves Creek mine, Tenn. *403
Lower Mammoth, Utah. 235
Lowden, H. B. Screening at Utah Cop. mill. 992
Lucette gold mine, France. *792, 1061
Lucky Boy mine, Hawthorne, Nev. 775, 1065
Lucky Gus mine, Colo. 105
Lucky Spot mine, Calif. 1062
Lucky Tiger. 580, 826, 1066, 1214
Lucy, Frank A., Death of. 1252
Ludlum, A. C. Gold dredging developments. 766
Ludvika. See "Electric smelting."
Luipaards Vlei. 81
Lulea Iron Works. 909

PAGE

Lunge, George. 669, 716
Lustre Mg. Co. 697
Luty, S. F. Pittsburg iron and steel markets. 78
—Pittsburg dist. coal in 1908. 85
Luxemburg, Iron. *1221
Lydia mine, Utah. 1158
Lyon, Frederick. 966
Lyon, E. W. Gold mining, N. C. *293, 460
Lyon Hill Consol Mg. Co. 43

M

McCallum, M. 1300
McCarthy, G. A. 770
McCharles, A., prize. 855
McCreath, A. S. Va. manganese. 1056
McCullough, Chas. E., Death of. 966
McDonald, Alex., Death of. 228
Macdonald, A. G. Addison's Flat. *198
McDougal, E. C. Price adjustment. 310
McDougall, C. W. Setting timber, inclined shafts. *656
McEvoy, James. 1252
McFarlane, G. C. Loading blast holes and driving small drifts. 225
—Freighting ore with big string teams. 1078
—Automatic-dumping skip for vertical shafts. *1281
MacGeorge, J. A. Rock drills. *895
McHenry mining-stock tax bill. 34
McKell Coal & Coke Co. *508
McKelvy, Wm. McC., Death of. 621
Mackenzie, G. C. Iron and steel, Ont. 547
McKinley-Darragh, Ont. 432, *1269
Maclaren, Malcolm. 274
McLean, J. H. 770
McLeish, J. Mineral production, Canada. 563
McMartin, J. 479
MacMillan, C. H. 1014
MacNamara mine, Nev. 280, 377, 478, 526, *594, 722, 872, 1110, 1307
MacNaughton, James. 1014
Mabon mine, N. S. 384
Machines, Mining coal by, Eng. 649, *797
Madagascar notes. 29, 427, 475, 968, 1094
Madder, W. H. 424
Magdeburg rules, Smokeless combustion. 1142
Magistral, Durango, smelter. *697
Magistral, Zacatecas, smelter. 1303
Magnesite in Calif. 138, 292, 717
Magnesite in India. 1075
Magnesite, Magnesium, in 1908. 82, 138, 1095, 1184, 1247
"Magnetic Deposits of Cornwall Type in Penn." †618
Magnetic oxide in matte. 1195
Magnetite treatment, Copper blast furnace. 962
Main, Alfred F. 913
Maine, Gold, in 1908. 53
Maine Tourmaline Co. 1127, 1128
Maine, Western, Gem-bearing pegmatites. 1127
Majestic mines, Utah. 873
Malacate, Mexican, in England. *1033
Malay tin in 1908. 72, 335
Maltman, Albert. 424
Mammoth Cop. Co. 886, 1304
Mammoth-Grand Central Case. 608, 325, 622
Mammoth mine, Utah. 627
Management, Good, Value of. 569
Mance, F. S. Australasia mining. 123, 814
Manganese, Bahia, Brazil. *1029
Manganese deposits, etc., Virginia. 1056, 1247
Manganese, South Africa. 887, 1041
Manganese deposits, Southern India. 955
Manganese ore, U. S., in 1908. 76
Manganese property, South Carolina. 920
Manganese—Vein in Nicaragua. *1130
Manhés converter. 1081, *1083
Mann, E. A., on burning of dynamite. 246
Mannerheim, Baron. Sharpening drills. 767
Mansfeld matte smelting; gas power. 459
Maopa forest, Nev. 776
Map work, Geol. Surv. 211, 221
Maplethorpe, H. Mex. malacate in Eng. *1033
Mapping Granby Co.'s mines. *255
Marble, Brazil. *1031
Marble quarry, Mina, Nev. 775
Marchand, M. Magnetite and lightning. 800
Margin on zinc ore. 1053
Marianna explosion, etc. 13, 14, 86, 173, 222, 505, 951
Markham, Tex., oil discovery. 95
Marquette range in 1908. 610, 711
Marriott prize offer. 1058
Martin and Copper Queen mine. 409
Martin bill for experiment stations. 264
Martin, Joseph, Report of. *994
Mary McKinney mine, Colo. 182, 867
Maryland, Coal. 91, 162, 903
Maryland colliery accidents. 14
Maryland, Iron, in 1908. 321, 418
"Maryland Mineral Industries." †35
Maryland, Mineral production. 903
Mason Valley Mg. Co. 120
Mass Consol., Mich. *62, 184, 775, 823, 918, 1007, 1157, 1258
Massachusetts Geological Survey. 398
Massachusetts Inst. of Tech. 376

PAGE

Massey, G. B., II. Dredges for placers. *833
Mathias, Thomas H. 274
Matte, Magnetic oxide in. 1195
Matte-separating forehearth. *1232
Matte-tapping car, Kilker. *1294
Mattes, Col. Chas C., Death. 1300
Matters, C. W. Tonnage estimation. 642
Matthewson, Mr., and smoke case. 562
Mauss' Konomax drill. *549, *895, 999, *1090
May Consol., Transvaal. 523, 551
May Day mine, Utah. 825
Mayer, L. W. "Mining Methods in Europe." †1013
Mayer's Prospect, South Africa. 623
Mayflower mine, Nev. 41, 234, 1110
Mayflower-Bullfrog Consol. 1017
Maynard, G. W. Verde mine, Ariz. 560
Maynes, B. G. 228
Mayville, Wis., iron mines. 610, 767
Mazuma Hills, Nev. 478, 825
"Mechanical Appliances of Chem. and Met. Industries." †374
Medal award, Canadian Mg. Inst. 571
Medell, W. S. Peroxide method for lead. 262
Meeks, Reginald. 178, 520, 913
Meerschaum in U. S. and elsewhere. 469
Meerschaum, Note on. 1075
Memminger, C. G. Fla. phosphates. 667
Mendota Coal & Coke Co. 89, 1021
Mennell, F. P. "Rhodesian Miner's Handbook." †1149
Mennicke, H. Utilizing detinning products. 1145
Menominee range in 1908. 610, 711
Mercury. See also "Quicksilver."
Mercury determination, Volumetric method. 1047
Merrill, C. W., classifier. *808
Merrill, L. T. Analysis, Okla. blendes. 1148
Merton, H. R., & Co. 265, 764, 907
—Correction. 1054
Mesabi range. 610, 711, *741
Messabe-Morenci Devel. Co. 1304
Messina Cop. Mg. Co. 752
Metal production, 1908. 51
Metal prices, 1908—Charts. *57, *63, *73. *74
Metal prices, 24 years—Chart. *57
Metals, Foreign trade, U. S. 336
See also "Foreign trade."
Metals, Rare. See "Rare."
Metals, Separating in solution. 1012
Metallics. 1010
Metallurgical secret, Revelation. 464, 963
Mexican Consol. M. & S. Co. 698
Mexican Northern Electric. 628, 1112
Mexico mill, El Oro. *683, 686, 696
Mexico N. W. Ry. Co. of Can. 778, 869
Mexico—Alamos and Arteaga dists. *699, 963
—Cananea Consol. in 1908. 701
—Chihuahua, Western, Traveling. *706
—Chile mill—El Bote mine. *1182
—Coal. 127, 1255
—Concentration methods, Various. 821
—Copper. 56, 59, 127, 681, 764, 907
—Cyanide lixiviation by agitation. *695
—Cyanide mills. Practice in—Table. 696
—Durango, Northern, Trip through. *697
—El Oro, Milling and cyaniding. *683
—Electrolytic precip., Minas Prietas. 705
—Geological, etc., publications. 821
—Gold in 1908. 53, 127
—Guanajuato dist. geology. *691
—Incorporation of American companies operating. 268
—Inst. de Minas y Met. 667, 772, 992, 1303
—Laws; mining code. 151, 690, 694, 821, 1017, 1055, 1209
—Mint report. 858
—Mining in 1908. 126
—National Engineering School. 256
—Oilfields, Investigation of. 1233
—Pachuca—Adair-Usher process. 317
—Pertenencia titles granted. 708
—Petroleum. 127, 1233, 1303
—Precipitation by soluble sulphides. 841
—Producer plants. 698
—Prospector, American—His problems. 694
—Railroad development. 868, 1201, 1209
—R. R. systems, northern Mex.; map. *712
—Rio Plata mine. *147
—Virginia and Mex. cyanide plant. *170
—Yaqui peace. 363
—Zacatecas dist., Relations of. *1227
—Zinc and sulphur. 1012
—Zinc ore. 569, 432, 1010
—Zinc smelting proposed. 1303
Meyer & Charlton mine. 964
Meyer, Franz. 572
Meyer's mine-gas experiments. 1244
Meyer's tangential chambers, Gaseous currents in. 1033
Miami, Ariz. 39, 59, 181, 222, 1256
Miami, Okla., camp. 70, 496, 919
Mica, Brazil. *1031
Mica, India. 894
Mica, Maine. 1127
Mica mining—Canada; U. S. 941
Mica working, Oliphant's river. 793
Michigan, Coal. 88, 91, 162
Michigan, Copper. 56, *60, 907, 1007
Michigan Cop. Mg. Co. *62, 232, 577, 775, 918, 1007, 1063, 1305
Michigan, Gold, in 1908. 53
Michigan, Gypsum. 1249

PAGE

Michigan, Peat lands. 1096
Michigan, Silver, in 1908. 54
Michipicoten range in 1908. 610
Microstructure of complex ore from Frisco mine, Idaho. *260
Microstructure of copper examined with new etching agent. *1040
Mid-Continental oil and gas. 92, 96
Midas mine, Knob P. O., Calif. 717
Midas mine, Shasta Co., Calif. 774
Milan copper mine, N. H. 112, 318, 1158
Mill sites—Proposed law. 517
Miller, E. O. 473
Miller lease, Rawhide, Nev. 184
Miller, Willet G. 571, 572, 1154, *1268. 1271
—Cobalt map *133
Milling, Cripple Creek dist., Colo. 956
Milling at Rawhide, Nev. *345
Milling situation, Cripple Creek. 251
Mills, Frank. 716
Mills' photos. of drill holes. *551
"Millwrighting." †1013
Minas Prietas, Electrolytic precipitation. 705
Mine Inspectors' Institute, Scranton. 1238
Mine La Motte. 67
Mine, Terminating company with. 1291
Mine 21, Reclaiming inclined hoistway *600
Mines as investments. 1193
Mines of Mexico. 628
Miner's Mills Coal Co. 44
Miners' Smelting Co. and Silver King Coalition. 326
Mineral and metal production, 1908. 51
"Mineral Industry, The"—Plans. 449, 1246
—Table of U. S. productions. 1095
—World's pig iron production. 1098
Mineral Point mine, Idaho. 673
"Mineral Resources of U. S." †618
Mineral wool, U. S. 989, 1095
Minerals, Prices of, in 1908. 82
Minerals Separation, Ltd. 38, 216
Minnesota, Gold, in 1908. 53
Mining districts, Comparative output. *739
Mining Engineers, A. I. See "American."
Mining Engineers, Institution. See "Institution."
Mining law. See "Laws," etc.
Mining & Metallurgy. See "Institute."
"Mining Methods in Europe." †1013
Mining schools, State, Federal aid for. 261
Mining Soc. of Nova Scotia. 572, 770
Minneapolis & Radersburg. 721
Minnesota iron-property assessments. 619
Minnesota lake-bed case. 1064
Mint. See also "Coinage."
Mint, British, coinage, etc. 285, 990, 1293
Mint, Canadian, statement. 479
Mint purchases, Silver, U. S., 1908. 55
Mirror used in entering shaft. 1010
Missed holes—Accident prevention. 299
Mississippi, Coal. 162, 721
Missouri. See also "Joplin."
Missouri, Coal. 91, 162, 237, 725
Missouri Geological Survey. 1008
Missouri, Lead, in 1908. 64, 65, 69, 71, 191, 763
—Map of S. E. dist. *66
Missouri ores, Geology of. 857, *1049
Missouri School of Mines. 1252
Missouri, Silver, in 1908. 54
Missouri, Zinc 67, 69, 71, *73, 191, 465
Mitchell's, D. P., ore-pass. 372
Mitchell, G. E., and smelter smoke. 1200
Mitchell, J., on accidents, discussed. 12
Mitchell, Pentecost E. 770
Moctezuma Cop. Co. 655
Modern pulverizer and concentrator. *295, 296, 460, *935
Modern Sm. & Ref. Co. 1153, 1301
Modderfontein B. 129, 131
Moffat, John. 1092
Mogollon Gold & Cop. Co. 626
Mogul, S. D. 112, 1259
Mohowk mine, Ariz. 103
Mohawk, Mich. *60, 279, 872, 1007
Mohawk, Nev. 719, *1231
Mohawk Combination, Nev. 179, 1229
Mohawk-Jumbo, Nev. 118, 179
Mohr, Paul F. 717
Mokta-el-Hadid Co. 1303
Molybdenum ore, U. S. 1242
Molybdenite, Rose creek, Nev. 775
Monarch mine, N. M. 578
Monazite, Brazilian. 761
Monazite—Questions answered. 469, 769
Monel metal 533, 988, 1050
Money in U. S., Jan. 1. 272
Monidah Trust, Mont. 59
Monitor-Tunnel Mg. Co. 819
Monitor Mg. Co. 108
Monongahela coal traffic in 1908. 85, 283, 433
Monongahela Riv. Consol. report, etc. 85, 283, 581, 949, 1213, 1215
—Report. 349, 579
Monsanto Chemical Co. 609
Montana, Coal and coke. 91, 162, 179
—Gt. Falls coalfield. *587
—Mining industry; map, etc. *845
Montana Coal Co. *848
Montana Coal & Iron Co. *846
Montana, Copper. 56, *106, 907, 1251
Montana-Corbin Cop. Co. 1110
Montana corporations, Reports. 349
Montana, Gold, in 1908. 53, 108

PAGE

Montana mines taxation. 59
Montana Mining Asso. 578
Montana Mg. Co. report. 1056
Montana mining in 1908. *106, 200, 1251
Montana, Silver, in 1908. 54, 108
Montana Soc. of Engineers. 38, 230, 376, *408, *498, 621, 866
Montana-Tonopah, Nev. 280, 331, 431, 526, *594, 626, 1021
Montana, Zinc and lead. 108, 465, 763, 912
Monte Amiata mines, Italy. 141
Monte Cristo, N. M. 626
Monterey I. & S. Co. 127
Montgomery mine, N. C. 296
Montgomery Shoshone. 120, 776, 1020, 1110, 1212, 1307
See also "Shoshone."
Moore, B. T. Coal production. 1303
Moore, Ernest V. 1014
Moore, James A. 1066
Moore, Capt. Wm., Death of. 770
Moore, E. S. Ont. iron ranges. 547
Moore lease, Nev. 525
Moose Gold Mg. Co. 180, 1254
Moreau, T., on explosions. 427
Morgan, Cecil. 520
Morgans, H. M. Norton Hill explosion. *994
Morley, Frederick H. 572, 669
—Traveling, western Chihuahua. *706
Morning Glory mine, Calif. 1152, 1207
Morning mine, Idaho. 1063
Morris, Harrison S. 572
Morrison, A. C. Acetylene lamps. 272
Morrison, E. Chicago iron market, 1908. 78
—Chicago coal market in 1908. 84
Morrison, M. M. *1073
Morrison, W. L. Laboratory methods for making alloys of vanadium and iron. *1035
Morro Velho mine, Brazil. 355
Morsack, C. Feldspar mining, Ont. 759
Morse, Willard S. 324, 274
Mortar, Mixture for. 612
Mortages & Grignon. 427
Moscow Mining & Milling Co. 968
Mosher, D. Ammonia cyanide process. 814
Mostowitsch, W. Behavior of calcium sulphate at elevated temperatures with some fluxes. 602, 614
Mother Lode claim, B. C. 479
Mother Lode mine, Ont. 528
Motor. See "Electric," "Locomotive," etc.
Mt. Andrew mine, Alaska. 1018
Mt. Audubon Power Co. 231
Mt. Bischoff Co. 125, 856, 1048
Mt. Lyell Co. 124, 363, 414, 1048
—Report. 711
Mt. Mica mine, Me. 1127, 1129
Mt. Shasta Gold M. & M. Co. 1134
Mt. Molloy mines, Queensland. 1125
Mt. Morgan gold and copper mine, Queensland, metallurgical works, etc. By G. W. Williams. *635, *802
—By J. B. Wilson. *746, *838
—Report. 690
—Notes. 125, 171
Mt. Wrangell dist., Alaska. *102
Mountain Cop. Co. 199
Mountain Dell mine, Utah. 1213
Mountain Iron mine. 711
Mountain Lake Extension. 718
Moutiers iron mine, Lorraine. *1221
Mowbray oil furnaces. 767
Moyer, F. H. 520
Muir, Douglas. 621
Multicipher device. *560
Mundic mine, etc., Mt. Morgan. *637, *802, *746, *838
Mungana mines, Queensland. 603
Murex magnetic process. 1061
Murphy drill. 999, *1091
Murray lease, Rawhide, Nev. 185, 330, 382, 478
Myers, Edward, Death of. 472
Myers, James W. 1300
Mysore Gold Mg. Co. report. 1041

N

Nacozari copper operations. 59, 127
Nacozari R. R. *712
Nagel, O. "Mechanical Appliances of Chem. and Met. Industries." †374
Naica Co., Mex. 480
Namaqua Cop. Co. 1289, 907
Nankervis, J. L. Mich. gypsum. 1249
Naphthalene, Solid, engine, Deutz. 1010
Narvaéz, Capt. and Chile mill. *1182
Natal, Coal, etc. 661, 826
National Bank mine, Nev. 578, 972
National Conservation Commission, Conference, etc. 33, 174, 212, 318, 369, 466, 509, 515, 608, 609, 619. 1048, 1133, 1202
National Engineering School of Mex. 256
National Gold Dredging Co. 275
National Lead Co. 67, 514
—Report. 817
Native Son mine, Calif. 917
Natoma Consol. 258
—Notes. 179, 229, 275, 573
Natural gas. See "Gas."

PAGE

Natural resources, Conservation. 33, 174, 212, 318, 320, 369, 421, 466, 509, 608, 619, 716, 859
—Canada. 968
—Australasia. 1048, 1133
—Jas. Douglas' address. 515, 1202
Neal, Walter, Inventions of. *684, 687, *688
Needham, J. C. 171, 226
Neff, Jacob H., Death of. 770
Nefzas mines, Tunis. 475
Neill, Robert. 376
Nelly Bly mine, N. M. 890
Nelms, H. J. Control of explosions. 14
—Economical development, coal mines. *800
Nelson, C. N. Trip through northern Durango. *697
—Hand jig in practice. *910
Nelson-Jenks Coal Co. *847, 849
Nelson, S. T. Preventing overwinding. 1150
Netherlands East Indies. See "Dutch."
Neuchatel Asphalte Co., Ltd. 497
Neukirch-Freytag coal and stone-cutting process. *1230
Neuman, Paul. 276
Neumann, A. B. 520
Nevada City, Mining and milling. *396, *439
Nevada coal mining. 558
Nevada Consol. 185, 280, 366, 776, 873, 859, 972, 1110, 1212
Nevada, Copper. 56, *119, 120, 907
Nevada-Douglas. 120, 776, 915
Nevada Empress mine, Nev. 478
Nevada, Gold. 53, 118, 179, 915, 1229
Nevada, Goldfield dist.; map. *1229
Nevada Hills mine, Nev. 577
Nevada legislation. 377, 719
Nevada mining in 1908. *118
Nevada, Petroleum. 179, 230, 626
Nevada, Silver. 54, 118, 1229
Nevada, Sketch map of. *290
Nevada-Utah, Nev. 776, 1158
Nevada Wonder mine. *291, 578, 824
Nevada, Zinc and lead. 465, 763
New Arcadian, Mich. 1020, 1305
New Baltic, Mich. 232, 429, 577, 1258
New Brunswick, Oil-shale. 968
New Caledonia, Ore-handling plant. *391
New Caledonia statistics, etc. 628, 719, 1094
New Chums, Bendigo. 151, 323
New Hampshire in 1908. 53, 112, 318
New Haven Gold Mg. Co. 914
New Hebrides, Mineral possibilities. 957
New Idria mine, Calif. 141, 1193
New Jersey Central coal traffic. 187
New Jersey, Copper mining. 808
New Jersey, Iron, in 1908. 321
New Jersey Zinc Co. 11
New Jersey, Zinc mining in. 11, 465
New Market Zinc Co. *403
New Mexico, Coal and coke. 88, 91, 108, 162
New Mexico, Copper. 56, 109, 907
New Mex., Gold, in 1908. 53, 108
New Mex., Iron, in 1908. 109
New Mex., mining in 1908. 108
New Mex., Silver, in 1908. 54, 110
New Mex., Zinc and lead. 465, 763
New Monarch—Cleveland shaft. 39, 232, 328, 673, 720, 1301
New Primrose, Transvaal. 132, 1107
New South Wales. See also "Australasia."
New South Wales, Coal. 126, 887
New South Wales, Copper. 852
"New South Wales, Copper Mining." †35
New South Wales, Gold. 664
See also "Australasia."
New South Wales, Iron ore. 349
New South Wales mines, Electricity. 317
New South Wales production, etc. 912, 902
New South Wales, Tin. 902
New State mine, Okla. 496
New York-Arizona. 231, 380, 575
New York Bar Asso. 309
New York Central's excavations. *1296
New York copper market in 1908. 56, *57, *73, *74
New York Engineering Co. 767
New York, Garnet. 81, 1273
New York, Graphite. 99, 1273
New York, Iron and ore. 321, 1273
New York lead market in 1908. *63, 64, *74
New York Metal Exchange. 729, 830
New York, Mineral production, 1908. 1273
New York open air stock market. *356
New York Petroleum. 92, 99, 1273
New York spelter market in 1908. 69, *74
New York State Barge Canal. 1095
New York tin market in 1908. 73, *74
New Zealand. See also "Australasia."
New Zealand, Addison's Flat. *198
New Zealand, Coal-mining methods. *753
New Zealand in 1908. 16, 123, 297, 323, 565
"New Zealand, Papers and Reports. †374
Newfoundland, Copper. 681, 907
Newhouse Mines & Smelters. 185, 230, 522, 527, 573, 972, 1060, 1208
Newhouse, Samuel. 230, 275
Newland, D. H. Garnet, N. Y. 81
—Adirondack graphite. 99
—Mineral production, N. Y. 1273
Newport Iron Works. *853
Niagara Falls Power Co. 1010
Niblick mine, Alaska. 100

PAGE

Nicaragua, Conditions in. 1140
Nicaragua, Vein formation, Features of. *1130
Nichols, Horace G. 866
—Slime settling. *837
Nicholson, F. Mex. zinc ore. 569
Nickel, Canada in 1908. 134, 563
Nickel, Electrolytic determination. 590
Nickel in steel, Direct method. 912
Nickel, New Caledonia, etc. 628, 719, 1094
Nickel, Ontario. 752
Nickel, U. S. foreign trade. 336
Nicodemus Mg. Co. 1259
Nicol, William. 966
Nicola Valley C. & C. Co. 250
Nicolardot, P. "Metaux Secondaires et des Terres Rares." †618
Nicou, P. Italian asphalt. 497
Nigeria, Bitumen. 1037
Nipigon iron ranges, Ont. 547
Nipissing mines. Ont. 43, 236, 384, 580, 1112, 1268, *1270
—Report. 903
Nipporium. 652
Nissen, George, Death of. 866
Nitrate of calcium, Norway. 620
Nitrates, Brazil. *1030
Nivenite. 257
Niver, W. K., Coal Co. 964
Norambagua mine, Calif. 575, 1108
Nordhaeuser Kaliwerke. 1239
Norfolk & Western Ry. 908
Norrie iron group. 610, 711
Norris, G. L. 376
Norris, R. V. 324
North American Asbestos Co. 112, 1016
North Am. Smelter & Mines Co. 1153
North Broken Hill mine. 213
North Butte, Mont. 59, *106, 108, 878, 967, 1251
North Butte Extension, Mont. 40, 382, 525, 574, 622
North Carolina Geological map. *294
North Carolina, Gold-mining progress. *293, 460, *935
North Carolina, Gold, in 1908. 53
North Carolina, Silver. 54, 297
North Carolina, Tin deposits. 1139
North Dakota, Coal. 91, 162
North Dakota coal lands. 765
North Dakota, Gas. 1089
North Lake Co., Mich. 1020, 1258
North London Ry. Co. 954
North Park coal beds, Colo. 379
North Star Mines Co. 348, *396, *439
Northern Calif. Dredging Co. 425
Northern Calif. Gold Mines Co. 37, 670
Northern Calif. & Nev. Consol. 870
Northern Calif. Power Co. 521
Northern Pacific coal plant. *847
Northern Pacific Ry. Co. 38, 378, 819, 914, 1207
Norton Emery Wheel Co. 1033
Norton Hill colliery explosion. *994
Northwestern Impvt. Co. 89, 106, *846, 847
Norway, Calcium-nitrate industry. 620
Norway, Elmore process in. 1276
Norway, Mining law amendment. 1091
Norway, Pyrite smelting, Knudsen method. *1080
Norway, Sweden, Electric smelting in. 379, 963, 1050
Norway mining, State regulation. 908
Norwood, C. J. Kentucky production. 1250
Notice boards in mines. 266
Nourse mines, Transvaal. 131, 399, 559, 619
Nova Scotia, Coal. 333, 565, 1244
Nova Scotia, Mining Soc. of. 572, 770
Nova Scotia Steel & Coal Co. 333, 528, 874, 1214
Nugent lease, Rawhide, Nev. 184
Nuisances, Law of. 884
Nürnberg gas engines. *1189
Nuttallburg Collieries Co. 236

O

O. K. Copper Mines, Ltd. 606
O. K. mine, Australia. 125
O'Brien mine, Ont. 384, 1260, 1268, *1271
O'Farrell, M. B. 819
Oakdale Ore Purchasing Co. 199
Obalski, J. Quebec mining law. 1201
Oboukhoff works, Russia. 909
Ocampo dist., Mex., Trip to. *706
Occidental Gem Corp. 1039
Ocean Star mine, Calif. 1105
Octahedrite. 10
Ogawa, M. 652
Ohashi, T. 669
Ohio and W. Va. coal railroads. 1138, 1261
Ohio, Coal and coke. 90, 91, 162, 509, 529, 779
Ohio Coal Operators' Asso. 722
Ohio colliery regulations. 663
Ohio Cop. Co. 113, *114, 230, 281, 378, 474, 522, 1106, 1208, 1308
Ohio Geol. Surv. coal reports. †35
Ohio, Iron and steel. 321, 562
Ohio-Keating Gold Mg. Co. 1110, 1157, 1211, 1258
Ohio Oil Co. 93
Ohio, Petroleum. 92, 99
Oil. See also "Petroleum."
Oil and asphalt lands, Calif. 1233

PAGE

Oil-burning locomotives. 266
Oil Calif., companies, Dividends. 93, 811
Oil, Calif., Extension of production. 1198
Oil companies controlled by Standard. 218
Oil, Crude, burning furnace, Witt. *889
Oil extraction from boreholes. *1001
Oil fuel, Cananea Consol. 704
Oil gusher, Uncontrollable, Pearson & Son's. *7
Oil, Miners', Testing of. 511
Oil pipe line, longest, from Okla. 1198
Oil prospects, etc., Nev. 179, 230
Oil-shale industry, Australia. 1051
Oil-shale, New Brunswick. 968
Oils, Crude, American, Composition. 297
Oils, West Africa. 1037
Oilfield, New, Utah. *989
Oilfields, Mex., Investigation. 1233
Oilfields, Sakhalin. 1039
Ojibway, Mich. *60, 279, 329, 381, 429, 577, 775, 823, 1064
Ojuela mine, Sulzer pump. *404
Oke, A. L. Sample grinder. *990
Oklahoma blendes, Analysis. 1148
Oklahoma, Coal and coke. 91, 162, 237, 361, 725
Oklahoma, Mineral investigation. 1307
Oklahoma, Petroleum and gas. 92, 96, 234, 1198, 1254
Oklahoma, Zinc and lead. 69, 70, 465, 763
Oklahoma, Zinc, near Ravia. 722
Oklahoma's new lead-zinc dist. 496
Olcott, W. J. 669, 770
Old Dominion, Ariz. 39, 59, 505, 1010, 1202
Old Dominion, Mo. 577
Old workings, Approaching. 220
Oliver filter, Grass Valley. *440
Oliver, George T. 621
Oliver Iron Mg. Co. 610, *741, 824
See also "United States Steel Corp."
Oliver & Snyder Steel Co. 280
Onaman iron ranges, Ont. 547
Oneco, Mich. 674, 1109
Ontario, Feldspar mining. 759
Ontario mines and iron deposits. 547
Ontario mineral production. 752, *1269
Ontario mining accident bill. 719
Ontario mining flotations cases. 276, 522
Ontario mining in 1908. *133
Ontario, South Lorraine dist. 214
Ontario tunnel. 42
Ooregum gold mine, India. 1293
Opastika Lake dist., Que. *455
Open-cut iron mining, Cost of. 742
Open-cut mining, Mt. Morgan. *748
Open cuts, Tonnage estimation. 640, 1011
"Open markets." 514
Ophir mine, Colo. 774, 823
Ophir mine, Ont. 1066
Ophir Mg. Co., Nev. 118, 473
"Optical Minerology, Elements of." †1013
Ore, Complex, from Frisco mine, Idaho, Microstructure of. *260
Ore Concentration Co. and others. 38, 216, 1275
Ore-concentration methods, Mex. 821
Ore deposits, Genesis, Guanajuato. *693
Ore deposition, Vadose, Locus of. 857
Ore formation, Wonder dist., Nev. *289
Ore-handling bridge, Duquesne Wks'. *944
Ore handling, Copper Queen mines. *541
Ore-handling plant, New Caledonia. *391
Ore-pass, Steel, Mitchell's. 372
Ore sizer, Sutton, Steele & Steele. *493
Ore stealing at Goldfield. 441
Ore-tonnage estimation, Solid and broken. *640, 1011
Ore-Transporting railway, Pyrenees. *1119
Ore volume removed, Computing tonnage from. *350
Ores commission, Colo. 379
Oregon, Coal, in 1908. 91, 162
Oregon, Gold, in 1908. 53
Oregon Mineral Paint Co. 919
Oregon, Silver, in 1908. 54
Orford Copper Co. 533, 988, 1050
Oriental mine, Nev. 229
Original Consol., Mont. 59, *106, 718
Oro del Norte, Calif. 476
Oroville Dredging, Ltd. 264, 268
Oroville dredging suits. 179, 200, 229, 521, 1253
Oroya-Brownhill, Australia. 652, 1292
Oroya South, Australia. 652
Osceola, Mich. *60, 183, 329, 514, 525, 1007, 1305
—Report. 568, 590
Osgood, S. W. Zinc mining, East Tenn. *401
Ossa, I. D. Jamesonite ore treatment. 891
Otisse-Carrie, Ont. 282
Otisse-Currie, Ont. 1214
Otisse mine, Ont. 186, 580, 1066
Otto Creek Coal Co. 871
Ouasta Mines, Algeria. 955
Ouenza mines, Algeria. 796
Oustomah gold mine, Calif. 573, 1019
Overstrom's classifier. 1153
Overwinding, Devices for preventing. 1150
Owens lake, Calif., Dispute. 717
Oxidation of coal. 995
Oxidizing furnace for pulverized ores. *1235
Ozark mineral fields. 857, *1049

P

P. J. D. Ventilation, Quality of. 15
Pachuca, Adair-Usher process in. 317
Pachuca tanks. 650, *695
Pacific Coast Borax Co. 137, 138
Pacific Coast Coal Co. 89
Pacific Power Co. 521
Packard, G. A. Vt. and N. H. 112, 318
Page on explosions, discussed. 12
Paint, Metallic, New York. 1273
Paints, Mineral, Tariff. 164
Palmarejo & Mex. Goldfields. 869, *1004, 1147
Palmer, Cortlandt E. 520
Palmer, F. H. Developing virgin coalfield. 510
Palmer, T. H. Water losses, Broken Hill. 851, 860
Pan Silver mine, Ont. 1066, 1255
Panama canal excavation record. 938
Panel method, Suggested. *307, 308
Panel system in metal mining. *1177
Panhandle smelter and Idaho Sm. & Ref. Co. 673, 867, 964, 970, 1059, 1207, 1253
Pape, W. A. C. 1104
Papers, Technical, Filing system. 1249
Paris, Steel stock in. 1292
Park, Wm. G., Death of. 274
Parker, E. W. Coalfields of U. S. 515
—On by-product recovery. 1202
Parral mill, Mex. 528
Parrish, K. C. 1252
Parrot, Mont. 59, *106, 771, 1251
Parsons, C. L. "Beryllium." †1013
Parsons, F. W. Coal and coke industries in 1908. 83
—Digest of recent coal literature. *507, 862
—Coal mining, central West Va. *1284
Partick, L. L. 819
Patent appeals, For court of. 265
Patent legislation in Wash. 16, 33, 768
Patent, Mining, Applying for. 597
Patent provisions, Proposed tariff. 662
Patents, Mining, New ruling. 1106
Patents, New. 273, 470, 668, 865, 1102, 1299
Patenting mining claims. 1146
Patricia mine, Calif. 819
Patronite. 813
Paul, Almarin B., Death of. 228
Paul, James W. 815
Pavements, Sluice. *23
Payne, Henry Mace. 1104
Peace River country, Gold. 920
Peak loads—Proposed power contract. *794
Pearce, Richard and H. V. 464, 963
Pearson, F. S. 778, 869
Pearson, S., & Son. 127
—Oil gusher. *7
Peat, Canada, fuel industry. 905
Peat Engineering Co. 1014
Peat, Canada, Gas from. 379
Peat, Indiana. 1196
Peat, Michigan lands. 1096
Peat, Notes on. 612, 663, 1196
Peat wood—Paving, etc. 1196
Pegmatites, Gem-bearing, Western Maine. 1127
Pei-Yang University, Imperial. 36
Penarroya company. 671
Penn-Wash Consol Mines Co. 825
Penn-Wyoming Cop. Co. 236, 431, 723, 1021
Pennsylvania accident-fund tax. 220
Pennsylvania accidents. 12, 90, 359
Pennsylvania, Coal and coke. 85, 90, 91, 162, 283, 529
Pennsylvania Coal, Barren zone. 509
Pennsylvania Coal Co. 715
Pennsylvania coal-land taxation. 776
Pennsylvania Dredging Co. 1253
Pennsylvania, Engineers' Society. 1104, 1300
Pennsylvania, Iron and steel. 321, 418, 562
Pennsylvania laws. 91, 316, 612, 722
"Pennsylvania, Magnetic Deposits, Cornwall Type." †618
Pennsylvania, Petroleum. 92, 99
Pennsylvania R. R. coal traffic. 187
—Coke cars. 658
—Rail specification. 758
—Buys N. & W. stock. 908
Pennsylvania, West., Mining methods. 511
Pennwood Coal Co. 526
Penoles, Compañia Minera de. *404
Pensions for iron miners. 1242
Penstock construction. *26
Pequignot, Z. J., Death of. 1206
Periodites, Ark. *152, 371, 616, 963
Perkins, W. G. 1206
Perm Corporation. 1274
Perofskite. 10
Peroxide method for lead. 262
Perran mine, Cornwall. 199
Perry, Edwin. 520
Perry, O. B. 316
Peru, Vanadium. 996
Peruvian mining, etc. 126, 496, 643, 681, 764, 907
Peters, U. Shape brick; furnace work. *447
Petroleum. See also "Oil."
Petroleum, African discoveries. 197
Petroleum, Burma. 310
Petroleum, Calif. 92, 121, 517, 573, 622, 887, 1046, 1191, 1198
Petroleum, Calif., Heavy. 136
Petroleum Calif. lands, Disposal. 1233
Petroleum, Canada. 135, 563

PAGE

Petroleum, Cape Colony discovery. 1182
Petroleum, China—Shensi. 1226
Petroleum, Colo. 92, 474
Petroleum companies dividends, Calif. 93, 811
Petroleum, Ind., in 1908. 92, 99
Petroleum industry of U. S. 92
Petroleum, Ill., in 1908. 92, 93
Petroleum, Kan.-Okla. 92, 96, 234, 1254
Petroleum, Kentucky-Tennessee. 92
Petroleum, Mex. 127, 1233, 1303
Petroleum, Nev. 179, 230
Petroleum, New York. 92, 99, 1273, 1274
Petroleum, Ohio. 92, 99
Petroleum, Ontario. 752
Petroleum, Penn., in 1908. 92, 99
Petroleum, Submarine, Calif.; Peru, *34, 814
Petroleum, Tex.-La. 92, 94, 232, 235
Petroleum, U. S., in 1908. 51, 1095
Petroleum, Utah. *989
Petroleum, West Va. 92, 99
Petroleum—Work of Geol. Surv. 2?1
Petroleum, Wyo., in 1908. 92, 1?a
"Petrology, Text Book of." †618, †1013
Peyton Chemical Co. 199
Phelps, Dodge & Co. 58, 109, 428, 715, 822
—Report. 655
Phila. & Reading C. & I. Co. 266, 873
Phila. & Reading statistics. 187, 951
Philippines, Coinage for. 498, 546
Philippines, Gold, in 1908. 53
Philippines, notes. 186, 479, 1021, 1213
Philippines, Silver, in 1908. 54
Phillips, James, Jr. 520
Phillips, L. Transvaal mining. 835, 869
Phillips, W. B. South Lorraine dist. 214
Phoenix quicksilver mine, Calif. 181
Phosphate lands, Disposal of. 265, 406, 505
Phosphate lands, Western, Withdrawal. 317
Phosphate rock, Idaho. 118
Phosphate-rock prices and trade. 82, 336
Phosphate rock, Questions on. 965
Phosphate, Tenn., in 1908. 139
Phosphates, Florida, Mining and milling. *490, 667
Photographing bore-hole. *854
Phthisis, Miners'—Rand sanatorium. 855
"Physics, Text Book of." †35
Pictou, N. S., coal analysis. 1244
Piedmont Tin Mg. Co. 1140
Pieler lamp. 314
Pierce Phosphate Co., etc. *490, 667
Pig iron. See "Iron."
Pigeon Mtn. Iron Co. 1109
Pigments, Mineral, Brazil. *1031
Pike co., Ark., Diamond mine. *152, 371, 616, 963
Pikes Peak Fuel Co. 1015, 1301
Pillar robbing, Davis mine. *1288
Pillars, Robbing, Fatalities from. 19
Pillars, Note on. 663
Pillars—Working methods, George's creek. *306
Pilot-Butte Cop. Co. 275, 622
Pinchot, Gifford. 1154
Pinguico rhyolites. *692
Pioche King Mg. Co. 330, 1110, 1158
Pioneer mill, Calif. *441
Pioneer mine, Bullfrog, Nev. 185, 234, 330, 430, 968, 1212, 1307
Pioneer Ore Sampling Co. 711
Pioneer strike, Nev. 377
Pioneer & Monitor, Colo. 231
Pipe line, The longest. 1198
Pipe lines—Hydraulic mining. *26
Pipes, Water in—Formulas. 1241
Pipes, Wood-lined, at Butte. *953
Pirsson, L. V. "Rocks and Rock Minerals." †35
Pitchblende, Colo. 1015
Pittsburg-Bartow Mg. Co. 1019
Pittsburg-Buffalo Coal Co.'s explosion, etc. 13, 14, 86, 173, 222, 505, 951
Pittsburg Coal Co. 85, 86, 581, 949, 964, 1193
—Report. 816
Pittsburg dist. coal in 1908. 85, 90, 283, 433
Pittsburg experimental station. 29, 196, 212, 446, 951
Pittsburg iron and steel markets. 78
Pittsburg & Lake Erie R. R. traffic. 385
Pittsburg Lead Mg. Co. 1019
Pittsburg & Salt Lake Oil Co. 1208
Pittsburg-Silver Peak, Nev. 279, 425, 674
Pittsburg Terminal R. R. & Coal Co. 1307
Pittsburg-Westmoreland Coal Co. 478
Pittsmont Cop. Co., Mont. *106, 108, 718, 824, 867, 1059, 1207
Pixley & Abell. 217, 646
Placer deposits, Development of dredges. *833
Placer gold mining, Interior Alaska. 591
Placer gold, Rawhide, Nev. *346
Placer ground, Testing. 223
Placers, Metals found in. 469
Platine, Compagnie Industrielle. 1303
Platinum in borax. 1232
Platinum, Nev., in 1908. 121
Platinum, Notes on. 1010
Platinum prices, N. Y., in 1908. *74
Platinum, Russia. 1083
Platinum, U. S., in 1908. 52, 55, 506
—Foreign trade. 336
—List of refiners, etc. 506
Platt, J. M., Turquoise dist. 213, 372

PAGE

Platteville Separating Co. 72
Playford, E. C. 1272
Plunkett, T. H. Gold cyaniding. *843
Plutus Mg. Co. 771, 825
Plymouth Coal Co. 776
Pneumelectric puncher. 694
Pocahontas Consol. 171, 186, 222, 267, 667, 899
—Merger sustained. 414
Poderosa Mg. Co. 764, 859
Poetsch refrigerating system. 615
Ponie air-lift modification. 1194
Poiseuille's viscosity experiments. 843
Poles, Gin, Sectional. *817
Pollatschek's packingless pump. *1000
Ponies, Pit, in England. 1006
Ponton, J. W. 520
Poole, C. P. "The Gas Engine." †815
Porcher, Chas. M. 1104
Porphyry copper mines, The. 859
Port Henry Iron Ore Co. *350, *600
Porter, C. T., awarded medal. 818
Porter, J. B. 572
Portland Canal Mining Co. 826
Portland, G. M. Co. 179, 180, 278, 378, 381, 820, 868, 1153, 1254
Porto Rico, Gold, in 1908. 53
Potash salt, New. 1239
Potassium salts, Germany. 633, 852
Potosi mine, Idaho. 118
Potter process. 124, 724, 821
Powder. See also "Explosive," "Dynamite," etc.
Powder, Blasting, Mfr. by miners. 812
Powder used, Mont. coal mines. *848
Powell Duffryn Steam Coal Co. 897
Powell, J. W., Monument to. 667, 1095
Power-contract change, Proposed. *794
Power development, Colo. 1298
Power, Harold T. 521
Powers, Roscoe. 966
Prairie Oil & Gas Co. 95, 96, 218
Prairie Pebble Phosphate Co., etc. 477, *491, 667
Prather, J. K. Tex. mining. 110
Pratt, J. H. Washer for low-grade gold ores. *935
Precious metals used in arts. 499
Precipitation, Copper, from Butte water. *953
Precipitation, Electrolytic. 705
Precipitation of gold and silver by soluble sulphides. 841
Premier diamond mine. 22, 523, 796, 789, 1240
—Report. 844
Pressure-box construction. *26
Prestea, Block A mine. 196, 427, 1005
Preston, W. T. Aluminum, Japan. 1289
Price, Wm. H. 716
Prices. See also names of metals, etc. 82
Prices—Index number for 1908. 960
Prices of chemicals, earths, minerals, etc., in 1908. 82
Prices, Refusal to adjust, menace to prosperity. 310
Prices, Steel, Economics of. 461
Prices, Steel, The cut in. 463
Prices, The question of. 310, 315, 316, 369, 513, 514
Primos Mg. Co. *1055
Primrose, John S. G. 1300
Prince Albert mine, Colo. 673
"Principles of Mining." †1149
Pringle, C. A. 621
Prinzregent mine. *647
Prize offered, McCharles. 855
Process Cop. Co., etc. 1054, 1245, 1212
Proctor, O. S.—Tunneling machine. *1296
Producer plants, Mexican. 698
Progressive mine, Colo. 182, 232, 720, 1257
Promontorio mine, Alamos dist. 699, 963, 1057, 974
Promontorio mine, near Moctezuma. 1066
Promontorio mine, Chihuahua, Mex. 384
Prospecting for ores of Goldfield type. 1121, 177
Prospecting placer ground. 223
Prospecting placer ground, Alaska. 592
Prospecting, Successful, with churn drill. 420
Prospector, American, in Mex.; his problems. 694
Prosser, H. A. 1252
Protection of life in coal industry. 509
Prussian bill regarding aliens. 821
Public land. See "Land," "Forest," "Coal," "Conservation," etc.
Publicity by mg. and met. companies. 369
Publicity in buying equipment. 1146
Puget Sound Iron Co. 888
Pulsifer, H. B. 228
Pulsifer mine, Maine. 1127, 1128
Pulverized-iron charge, Smelting. *1145
Pulverized ore, Oxidizing furnace. *1235
Pulverizer and concentrator, Modern. *295, 296, 460, *935
Pump, Centrifugal, Motor-driven, Sulzer. *404
Pump installation, Unusual, Buffalo S. P. Co.'s. 814
Pump, Large, Lowering into mine. *806
Pump, Packingless. *1000
Pump, Spiral, Frenier, Question about. 769
Pump, Vertical duplex, Blake & Knowles. 219
Pumps, Mine, Electrically driven. 422, 766
Pumps, Notes on. 762, 800

PAGE

Pumping and hoisting water. *1281
Pumping, Elec., Cripple Creek. 1057
Pumping iron mines, Lorraine. *1225
Pumping plant—Injecting concrete. *654
Pumping with air, Westinghouse outfit. *646
Pund, Francis X., Death of. 1151
Purchasing equipment, Publicity in. 1146
Pure Oil Co. 1109
Purington, C. W. 770
Pyrenees, Ore-transporting railway. *1119
Pyrite, New York. 1273
Pyrite prices in 1908. 82
Pyrite smelting, Knudsen method, Norway. *1080, 602
Pyrites, Gt. Brit., foreign trade. 241
Pyrites in 1908. 216, 336

Q

Quebec, Asbestos and cement. 564, 571, 826, 1260, 1308
Quebec mining law. 1046, 1201
Queensland. See also "Australasia."
Queensland gold, February. 661
Queensland, Mineral production. 1094
Queensland, Mining industry. *603, *635, *802, *838, 1092, *1125
Queensland, North, Tin mining and milling. 1092
Queensland, Tin. 125, 652, 1280
Questions and answers. 375, 469, 769, 812, 965
Quicksilver. See also "Mercury."
Quicksilver—Dennis furnace. 141, 235
Quicksilver, Italy. 1242
Quicksilver found, Modoc co., Calif. 1155
Quicksilver, Gt. Brit., foreign trade. 241
Quicksilver, Mex., in 1908. 127
Quicksilver, Nev., in 1908. 121
Quicksilver prices and mining in 1908. *74, 141
Quicksilver, Russia. 141
Quicksilver, Tex., in 1908. 110
Quicksilver, U. S., 51, 336, 1095
Quincy Mg. Co. *61, 279, 625, 775, 1007, 1211
—Report. 506
Quintera mine and smelter. *699, 963

R

R. J. J. Coal-mine explosions. 13
Radium, Banque de. 811
Radium in England; Institute; transaction in radium. 500, 1293
Radium ore, Colo. 1015
Radium, Question on. 965
Ragland, Walter. 1058
Rainbow, S. D. 479, 526
Rail, statistics for 1908. 321, 370, 387, 1148
Rail, Steel, question, Present position. 758
Rail used 32 years. 570
Railroad building, Africa. 407, 796
Railroad coal traffic, 1908. 187
Railroad rates on iron and steel. 169
Railroad systems, northern Mex. *712
Railroads and Hepburn law. 959, 961
Railroads, Coal, O. & W. Va. 1138, 1161
Railway, Electrically operated suspended, Koppel. *836
Railway, Ore-transporting, Pyrenees. *1119
Rainbow mine, Calif. 1152, 1207, 1301
Rakowsky, Victor. 1151
Rambler Mg. Co. 111
Ramsley mine, Devonshire. 1275
Rand. See also "Transvaal."
Rand, Drilling on. 130, 132, 318, 408, 495, *549, 623, 644, *658, 869, *895, 998, *1090
Rand, High stamp duty on. 817, 180, 756.
Rand, Jasper R., Death of. 770
Rand Mines, Ltd. 1036, 1039, 1041, 1094, 1107
Rand, Working costs. 559
Randall, Dwight T. 1058
Randsberg, Calif., Geology of. *1277
Rangely oil district, Colo. 474
Ransome, F. L. Alunitization. 177, 1121
Rare metals, Tariff. 164
Rare metals. 10, 203, 257, 518, 548, 813
"Rares, Terres, Industrie des." †618
Raritan refinery purchase. 765, 825, 860
Raven mine, Mont. *106, 349, 378, 429, 474, 674
Rawhide mill-project failure. 1107
Rawhide, Nev., leases. 184
Rawhide, Nev., Mining and milling. *345
Rawhide, Impressions of. 498
Rawhide Quartz M. & M. Co. *345, 347
Rawhide Queen; Kerns leases. 330, *346, 478, 721, 1258, 1306
Ray Consol., Ariz. 231, 320, 325, 327, 1210
Raymond, R. M. 708, 913
Raymond, R. W. 515, 859
Reading. See "Phila. & Reading."
Reading Iron Co. 261
Ready Bullion mine, Alaska. 100
Reagan, Nev. 578, 775, 972
Reavell's electric air compressor. 1045
Recorder, Electric, for watchmen. *454
Red Dog mine, Mo. *943
Red Hill mine, Ariz. 181
Red Metal, Mont. 59, 820
Red Star mine, Calif. 1207, 1301

PAGE

Red Top Consol. 118, 179, 279, 430, 1229
See also "Consol."
Reddick mine, Ont. 432
Redjang Lebong mine. 361, 850
Reed, A. H. 966
Refrigeration applied to mining. 615
Refugio mine, Mex. *707
Refunds of payments for surveys. 399
Reins mine, Mont. 477, 1254, 1301
Reliance Coal Co. 44
Reliance Mg. Co., Colo. 276
Reports, Engine-room, Keeping clean. *546
Republic Coal Co. 848
Republic Connellsville Coke Co. 431
Rescue. See also "Breathing."
Rescue apparatus. 462
Rescue apparatus, Austrian mines. 414
Rescue appliances, Tests of. 1192
Rescue stations and Geol. Survey. 81, 212, 558, 762, 823, 951
Rescue stations, Coal companies establish. 951
Restoring dredged ground. *946
Resurrection mines, Colo. 182, 276, 278, 477, 673, 1015, 1211
Retort, Zinc, charging apparatus. *1272
Reynolds, Edwin, Death of. 520
Reynolds, S. Discipline in mines. 224
Reynolds, Thomas Blair. 1274
Rheinpreussen mine. 647, *648
Rhodesia in 1908. 259
Rhodesia Katanga Junction Ry. 407
Rhodesian Kafir labor. 854
"Rhodesian Miner's Handbook." †1149
Rhodesian production, etc. 34, 53, 218, 259, 323, 492, 495, 601, 656, 759, 1240
—Successful mine—Globe & Phoenix. 1179
Rhyolites, Guanajuato dist. *692
Rice, Claude T. 572
—Prevention of accidents, metal mines. *298
—Milling and cyaniding, El Oro. *683
Richard, G. A. 802, 805, 839
Richards pulsator jig and classifier. 544
Richardson automatic coal scale. 421
Richardson mine, Ont. *759
Richmond-Eureka mine, Nev. *262
Rickard, T. A. 1104
Ricketts, A. H. Short talks on mining law. 597, 639
Ricketts, L. D. Cananea Consol. 701
Rickey, Thomas B. 574
Ridgewood claim, N. M. 873
Ridgway, J. E., Death of. 1104
Ridley, F. W. 36
Ries, H. "Clays." †815
Right of Way Mg. Co. 480, 580, *1267
Rio Plata, Mex. 127
Rio Plata mine and mill, western Chihuahua. *147
Rio Plata, Mex. 331, 628, 696, 1022, 1112, 1308
Rio Tinto Co. report. 765
Rising Sun Oil Co. 1033
Ritter, E. A. Wonder dist., Nev. *289
River-bed mining, Calif. 909
Roane Iron Co. *1
Roasting, Blast. 613, 602
Roasting furnace, Weeks. *1140
Roberts, F. C. 621
Roberts Victor diamond mine. 789, 850.
Robertson, James, Death of. 621
Robeson, J. H. 1151
Robins, Samuel M. 1151
Robins conveyers, etc. 313, 321, 703
Robinson, Cyrus. 669
—Motor-driven centrifugal pump. *404
Robinson mine, Transvaal. 132, 450, 458, *895
Robinson Deep. 132, 261
Robinson dist., Nev., map. *119
Robinson mine, Colo. 1305
Robinson, N. Isolation from after gases. 507
Rock, Francis, coal property. 1213
Rock Island Coal Co. 626, 868
"Rocks and Rock Minerals." †35
Rocky Mountain Club. 324
Rockwood, Iron operations at. *2
Roderick, Chief., Report of. 359
Rodgers, M. K. 1104, 966
Roechling Iron & Steel Wks. *648
Roechling-Rodenhauser furnace. *364
Rogers, A. P. Testing placer ground. 223
—Value of good management. 569
—New oilfield in Utah. *989
—Dredging conditions in Colombia. 1003
Rogers, H. H.—Vir. Ry.; death. 764, 908, 1054, 1094
Rogers Syndicate, Nev. 118, 179, 1229
Rogovin, I. I. Gold dredging, Russia. 1050
Roll mill, Ring, Sturtevant. 855
Roller bearings, Hyatt, on slag car. *204
Roodepoort United mine. 1199
Roof falls, etc., Accidents from. 13, 14, 19, 301, 359
Roosevelt tunnel. 328, 914, 1254
Root, J. W. Copper determination. 1041
Roots rotary blower in smelters. *352
Rope driving. 450
Rope, Notes on. 266, 566, 952
—Capping. 663
Rope, Hoisting, Auxiliary. 220
Roscoelite. 519, 813
Rose, C. A. Electric hot plate. 958
Rose, J. G. Platinum in borax. 1232

PAGE

Rose, T. K. Transvaal gold. 990, 1293
Roseberry Zinc Co. *402, 403
Rosebud mine, Ind. 326, 673, 1153
Roslyn Fuel Co. 89
Ross mine, S. C. 1139
Round Mtn. Mg. Co. 118, 120, 478, 1212
—Report. 996
Roundup Coal Co.'s churn drill. 420
Rowe, J. P. Montana coal mining. *845
Rowland, R. H. Electric hoists. *443
Royce, W. T. Open-air stock market, N. Y. *356
Ruby Creek dist., Alaska. 101
Ruby Mining Co. 675
Ruby-silver ore discovery, Calif. 1210
Ruddigore mine, Queensland. 603
Ruh, T. S. Examining dredging properties. *893
Ruhm,, H. D. Phosphate, Tenn. 139
Rumania, gold and copper deposits. 796
Russia, Asbestos deposits. 812
Russia, Cement exports. 1004
Russia, Coal in 1908. 212, 726
Russia, Copper. 681, 764, 907, 1274, 1293
—Correction. 1054
Russia, Dredging. 136, 861
Russia, Gold. 53, 763, 1034
Russia, Gold dredging. 1050
Russia, Iron. 1098
Russia, Platinum. 1083
Russia, Quicksilver. 141
Russia, Salt deposits. 1140
Russia, Tool-steel plant. 909
Rustless iron. 1147
Ruth mine, B. C. 250
Rutile. 10, 1010
Rutile mine, Australia. 745
Rutledge, J. J. Pyrites in 1908. 216
Ryan, D. M. 520
Ryan, John D. 1252
Ryan, W. D. 520

S

Saar Collieries, Germany. 952
Sacramento county exhibition. 1105
Sacramento Valley Power Co. 771
Saddle reefs, etc., Bendigo. 323, 348, 560
Safeguards, Colliery, Two efficient. 417
Safety. See also "Accident," etc.
Safety catches, Notes on. 367, 462, 548
Safety, Coal-mine, notes. 266
Safety lamp. See "Lamp."
Safety laws, Additional States. 175
—Proposals for codes. 1198, 1249
Safety, Relation to economy. 1303
Safford, G. "Who's Who in Mining." †374
Saginaw, S. D. 280, 579
St. Anthony Co., Wis. 973
St. Croix safety-catch device. 662
St. Elie Co., French Guiana. 623
St. Eugene mine, B. C. 248
St. Francis Iron & Land Co. 1110
St. George's colliery, Natal. 801
St. Ives, Goldfield, Nev. 674
St. Ives lease, Rawhide, Nev. 185
St. John del Rey report. 355
St. Joseph Lead Co. 67, 970, 1193
St. Louis coal receipts. 529
St. Louis M. & M. Co. 1057
St. Mary's Mineral Land Co.; King Phillip. *62, 233, 382
Salt and saltpeter, Brazil. *1020
Salt, Austria. 1091
Salt, Canada. 135
Salt for sprinkling dust. 1290
Salt, New York. 1273
Salt production with exhaust steam. 1150
Salt, Russian deposits. 1140
Sample grinder, Crude, efficient. *990
Sampling by machine. *269, 420, 516, 862
Sampling devices—Bag and chair. *218
Sampling metals. Filing in. 887
Sampling mill, Goldfield Consol. *311
Sampling ores from Cobalt dist. 1283
Samuelson's oval blast furnace. *853
San Antonio Co. 915
San Antonio de La Huerta. 432
San Bernardino Borax Co. 1256
San Diego de la Mar well, No. 3. *7
San Domingo Gold Mg. Co. 1015
San Francisco del Oro. 821
San Francisco gold and silver movement. 388
San Francisco-N. Y. sailing vessels. 819
San Francisco & San Joaquin Coal Co. 819
San Martin mine, Mex. 1017
San Poil-Republic, Wash. 675
San Toy, Mex. 580, 628, 676, 724, 1260, 1308
San Toy Mining Co. 505
Sand boils. 457
Sand, Preparing for leaching. 164
Sanders, R. H. Novel stadia rod. 616
Sanders, W. M., flotation process. *844
Sanderson, R. R. Churn-drill prospecting. 420
Saner, C. B. Shaft sinking. 215
—Skips or buckets, sinking vertical shafts? 644
Santa Bárbara mine, Mex. *147, *910
Santa Bolivia mine. 816
Santa Fé Ry. 169, 1198
Santa Rita and Chino. 1245, 1054, 1212
Saskatchewan, Coal. 565, 623, 676
Sauerbeck, A. Index number. 960

PAGE

Sault Ste. Marie canal traffic. 44, 48
Saunders, W. L. Driving rock tunnels. 515
Savannah Copper Co. 109
Saville, Thomas. 180
Sawyer mine, N. C. *293
Saxberget mine, Sweden. 1276
Saxman, C. W. 621
Sayre, Wm. H., Death of. 818
Scale, Automatic, coal, Richardson. 421
Scallon, Edward. 274
Scheelite, Description of. 203, 813
Schlessinger, B. S. 716
Schleuderberg, Geo. W. 1252
Schmidt, Henry C. 274
Schmattolla, Ernst. 1252
Schmitt, C. O. Ventilating note. 213
Scholz, C. Coal-dust explosions. 12
Schools, State mining, Federal aid for. 261
Schorr, Robert. 1300
—Power from copper blast-furnace gases. 459
Schumann, A. Elec determination, Nickel. 590
Schutte & Koerting dust collector. *863
Schwab on steel making. 709
Sconce at Copper Queen mine. *301
Scotch iron production. 239
Scott, C. E. Testing miners' oil. 511
Scranton Coal Mg. Co. 580
Scranton Mining Inst. 376
Scranton Mine Inspectors' meeting. 1238
Scrap, Consumption of. 911
Screen sizes and dust explosions. 17
Screens, Vibromotor ore-sizer. *494
Screening at Utah. Cop. mill. 992
Screening plants, Electrically driven. 266
Seaboard iron markets in 1908. 80
Seal of Gold Mg. Co. 179
Seamon, W. H. Volumetric method for determination of mercury. 1047
Sears, Stanley C. 572
Secrecy in the arts. 32
Secret, Metallurgical, Revelation of. 464, 963
Seddon, Wm. C. 621
Seeliger, O. "Creele's Calculating Tables." †1149
Seely's wood-preserving methods. 840
Seguranza mine, Mex. 186
Seismic disturbances and colliery explosions. 1197
Selby Smelting & Lead Co. 199, 275, 885
Selenium. Firedamp test with. 512
Sellars, D. B. 169
—Restoring dredged ground. *946
Separating metals in solution. 1012
Serpentinization and origin of diamonds. 789
Settling box, El Oro. *687
Settling cone, El Oro. 683, *689
Settling in cyaniding—Experiments. *842
Sevier Consol. 1066
Seward peninsula in 1908. 251
Seymour, H. F. 228
Sexton, Professor. 1300
Shaft sinking by freezing. 615
Shaft-sinking notes. 220, 415
Shaft sinking through faulted ground. 215
Shaft sinking, wet ground, injecting concrete. *653
Shaft, The deepest. 965
Shafts, Colliery, Round or square. 1096
Shafts, Vertical, Skips or buckets in sinking? 644
Shale, Oil. See "Oil."
Shale, Pulverized, for prevention of coal-dust explosions. 11
Shannon Copper Co. 277, 575, 1193, 1304
Shaw, S. F. Standard Consol. mill. *487
Sheedy, Dennis. 230
Sheet-ore mining, Joplin dist., Departure in. *942
Shelby, C. F. Slag car, Cananea. *204
Sheldon, Samuel B. 274
"Shenango." Ore freighter. 1226
Shepard, F. E. Richards pulsator jig and classifier. 544
Shepherd, Francis Henry. 424
Shirley Hill Coal Co. 477, 1211
Shockley, W. H. Nev. mining. 118
Short Creek coal mine, Ala. 505, 899
—Report on explosion. 896
Short talks on mining law. 597, 639
Shorthand by machinery. 469
Shoshone mine, Nev. 234, 280
See also "Montgomery."
Shot firing. See also "Blasting," "Electric," etc.
Shot-firing, Elec., in coal mines. *243, 417
Shot firing from elec. power service. 617
Shot-firing, Timely suggestions as to. 13
Shovel performance at Panama. 1199
Shovel, Steam, underground, Tenn. Cop. Co.'s. 309
Shovels, Automatic, underground at Joplin 70
Shuford mine, Tenn. *936
Shurick, A. T. Gt. Falls coalfield. *587
Siberia, Eastern, Gold and other minerals. 1034
Sibley, R. Power-contract proposal. *794
Siebel, F. J. 36
Siegler, M., on coal producing cost. 762
Siemens-Schückert rock drill. *1181
Sierra Buttes mine, Calif. 1059
Sigafoos boring machine, Test of. 820
Sign boards in mines. 266
Signals—Mining-safety laws. 176

PAGE
Signals, Winding, notes. 220, 266, 462
Signaling, Mine, Electric, Grand-Hornu. *855, *1248
Siguiri, Compagnie des Mines de. *400
Silver. See also "Cyanidation."
Silver, Alaska, in 1908. 54
Silver, Arizona. 54, 59, 103
Silver, Australasia. 123, 565
Silver Bar Mg. Co. 721
Silver, Brit. Col. 247, 248, 580
Silver bullion, Assaying. 942
Silver, Calif., in 1908. 54, 121
Silver, Canada, in 1908. *133, 563, 752
Silver, Cobalt production. *1269
Silver, Colo., in 1908. 54, 104
Silver, Commercial movement, in 1908. 52, 55, 190, 217, 239, 286, 388, 631, 646
Silver determination in gold bullion. 543
Silver-extraction formulas. 1241
Silver, Goldfield production. 1229
Silver Hill mine, N. C. 1110
Silver, Idaho. 54, *115, 118
Silver king Coalition. 186, 326, 473, 718, 1016, 1106, 1208
Silver King Consol. 1158
Silver King mine, B. C. 723, 826
Silver-lead mining, Freiburg. 987
Silver-lead smelting, Cost. 1007
Silver-lead smelting, East Helena. 350
Silver-lead smelting, Laurium, Greece. *881
Silver Leaf mine, Ont. 527, 921
Silver market, London, in 1908. 217
Silver, Mex., in 1908. 127
Silver, Michigan, in 1908. 54
Silver, Mont., in 1908. 54, 108
Silver movement, London. 646
Silver, Nev., in 1908. 54, 118, 1229
Silver, New Mex., in 1908. 54, 110
Silver, New Zealand. 297, 565
Silver, North Carolina. 54, 297
Silver, Ontario. 752, *1269
Silver, Ont., Search for field. 180
Silver, Ont., South Lorraine dist. 214
Silver, Oregon, in 1908. 54
Silver Peak Mg. Co. 120
Silver, Philippines, in 1908. 54
Silver precipitation by soluble sulphides. 841
Silver price, Low, affects lead. 32
Silver, Price, in 1908. 55, *74
Silver Queen, Cobalt. 186, 480, 974, *1267
Silver, Queensland mining, smelting. *603, *1125
Silver Shield patent ruling. 1106
Silver, South Dakota, in 1908. 54
Silver, Texas, in 1908. 54, 110
Silver, United Kingdom. 199
Silver, U. S. 51, 53, 54, 1095, 1150
Silver used in the arts. 499
Silver, Utah, in 1908. 54, *113
Silver, Washington, in 1908. 54
Silver, Weighing. 469
Silver, World's production. 1245
"Silverite" Aluminum alloy. 1079
Silverton smelter, Colo. 1019
Simmer Deep, Transvaal. 133, 495
Simmer & Jack. 132, 164, 452, 492
—Report. 34
Simmer & Jack East. 203, 261
Simmerone, Nev. 279
Simplex coal cutter. 1043
Simpson, W. E. 669
Simpson vs. Big Four. 1016
Sinking, Shaft. See "Shaft."
Sioux Consol., Utah. 276, 426, 1302
Siskiyou Dredging Co. 967
Siskol drill. 999, *1090
Sixteen-to-One mine, Calif. 967, 1105, 1152, 1301
Sizing, Close, of dry, finely crushed ores; Sutton, Steele & Steele Vibromotor. *493
Skeele, J. W. 866
Skeene, J. A. 1300
Skidoo camp, Calif. 1105
Skip, automatic dumping, for vertical shafts. *1281
Skip dumping, Copper Queen mines. *541
Skip-loading device, Granby Co.'s. *254
Skips or buckets, sinking vertical shafts? 644
Skookum mine, Idaho. 1257
Slag car used at Cananea. *204
Slag granulation and explosions. 1272
Slags, Calculating method. 962
Slags, Copper blast-furnace, Alumina in. 223, 1012
Slater, H. R. 179
Slaughter, W. F. Acetylene lamps. 177
Slime, Density factor for. 640
Slime—Improved vacuum filtering. *1004, 1147
Slime settling before cyaniding. *837
Slime treatment, S. D. 113
Slimes Treatment Co., Ltd. 873
Sloss-Sheffield Steel & Iron Co. 624
Sluice construction. *23
Smelter. See also "Furnace" and cross references from it, names of metals, "Matte," proper names, etc.
Smelter chimney, Gt. Falls. *156, *323
Smelter gases, Legal status. 884
Smelter-smoke question, Calif. 199, 275, 885
Smelter-smoke question, Mont. 265, 418, 474, 522, 885, 914, 960, 971, 1200
PAGE
—Mr. Mathewson on the case. 562
Smelter-smoke question, Mitchell and Traphagen on. 1200
Smelters' copper production, 1908. 56, 907
Smelters' eminent domain, Utah. 715
Smelting in bond. 662
Smelting progress in Calif. 199
Smelting, Silver-lead, Cost. 1007
Smelting works, Rotary blower in. *352
Smith, E. G. 324
Smith, J. Fewson, Death of. 1014
Smith, Kezdick. 1104
Smith, R. V. N. M. mining. 108
Smith, S. W. Tellurium assaying. 1176
Smoke cases. See "Smelter."
Smokeless combustion, Geol. Surv. on 960
Smokeless consumption of fuel, Rules. 1142
Smokeless & Sootless Coal Co. *846
Smoot, Senator. 265
Snell, Henry. 774
Snowfall reports, Calif. 425
Snowstorm mine, Idaho. *116, 1063, 1109, 1211
Snyder, H. S. 572
Snyder elec. process for zinc. 250
Société. See also proper names.
Société de l'Industrie Minérale. 196
Sociétë des Mines de la Bellière. *792
Société Nouvelle des Mines de la Lucette. *792, 1061
Soc. for Pro. Engineering Education. 1206
Socorro mines, N. M. 1212
Sodium, U. S. 910, 1095
Sodium salts prices and trade. 82, 191, 336
Solders, Soft, Cadmium in. 1140
Somerset Coal Co. 722, 1063
Sonoma Magnesite Co. 377
Sorting, Hand. 1097
South Africa. See also "Transvaal," "Rand," "Rhodesia," "Cape Colony," "Natal," "Diamond," "Gold," etc. 767
South Af. Asso. of Engineers. 767
South Af. Chem., etc., Soc. 180, 990, 1293, 1252
South Af. mining reports and life of mines. 31
South Alberta Irrigation Co. 580
South American mining in 1908. 126
South Australia. See "Australasia."
South Butte, Mont. 522, 1015
South Carolina, Gold, in 1908. 53
South Carolina, Tin deposits. 1139
South Columbus Consol. 42
South Crofty mine, Cornwall. 1017
—Tin-ore dressing. 651
South Dak. Gold, in 1908. 53, 112
South Dak. mining in 1908. 112
South Dak. safety laws. 175
South Dakota, Silver, in 1908. 54
South Lorraine silver dist., Ont. 214
South Pole mine, Ore. 1158
South Wellington Coal Mines. 251, 628
Southern Coal & Trans. Co. 278
Southern Hercules mine, Idaho. 673
Southern Indiana Coal Co. 625, 772, 876, 1019, 1024
Southern Pacific R. R. lines. *712, 1208
Southern Railway coal traffic. 385
Southern Steel Co. 583, 773, 870, 924, 976, 1262
Southwestern Interstate Coal Op. Asso. 237, 725
Souvenir Gold, Mont. 625
Spain and Portugal, Copper. 681, 764, 907
Spain, Iron. 453, 1098
Spain, Mining in. 453
Spalding, W. A. Explosions and earthquakes. 411, 416, 899, 1197
Speck Mining Co. 871
Speculation in copper, London. 1199
Speier, P., on zinc convention. 714
Spellmire, W. B. Electricity in coal mining. *507, 862
Spelter. See also "Zinc."
Spelter, Colo., in 1908. 69
Spelter, Illinois, in 1908. 69
Spelter, Kansas, in 1908. 69
Spelter, Lead and cadmium determination in. 1036
Spelter market, London, 1908. *73, 209
Spelter market of 1908. 69, *73, *74
Spelter, Missouri, in 1908. 67, 69
Spelter, Notes about. 368
Spelter, Okla., in 1908. 69
Spelter prices, 24 years—Chart. *57
Spelter statistics for 1908. 465
Spelter, United Kingdom, foreign trade. 241
Spelter, U. S., and zinc. 51, *63, 67, 68, 69, 265, 368, 465, 1095
—Foreign trade. 336
—Consumption. 1197
Spelter, World, in 1908. 265
Spencer, A. C. "Magnetic Deposits, Cornwall Type, Penn." †618
Spencer lease, Hawthorne, Nev. 1212
Sperry, E. S., Cadmium in soft solders. 1140
Spray system, Koerting. 663
Spraying. See also "Coal dust."
Spraying coal dust as colliery safeguard. *193, 417
Spring Creek Coal Co. *847
Spurr, J. E. 818
Stadia rod, Novel. *456, 616
Stafford, C. E. 520
PAGE
Stag Cañon Fuel Co. 655
Stahlknecht, E. B. 472
Stamp duty, High, on Rand. 817, 180, 756
Stamp-mill by-products, Assaying. 947
Stamp mill, Gravity, Evolution. 890
Standard Consol. Mg. Co., Calif. 1059
—Cyanide mill. *487
Standard M. & M. Co., N. C. 1021
Standard mine, B. C. 676
Standard mine, Idaho. 1063, 1211, 1257
Standard mine, Ore. 579
Standard Oil Co. 95, 96, 97, 715, 1010
—Companies controlled by it. 218
—Austrian agreement. 1112
Standard Oil Co. of La. 871
Stannary Hill Co., Queensland. 1092
Star M. & M. Co. 480
Star mine, Idaho. *115
Star of the Congo mine. 38, 407, 796
State Bank and T. B. Rickey. 119, 574
Station Grounds Mg. Co. 1302
Staunton, W. F. 1198
Steam, Exhaust, Salt production with. 1150
"Steam Power Plant Engineering." †35
Steam, Superheated, for winding engines. 467
Steel. See also under "Iron."
Steel, A. A. Crucible assays. 1243
Steel and iron tariff. 30, 164, 227, 609, 615, 617, 661, 662, 665, 709, 768, 809
Steel, Canada, in 1908. 564, 1217
Steel combination, Proposed. 678
Steel, Crushed, U. S. 1077, 1095, 1182
Steel, France. 62, 909
Steel, Germany. 829, 810, 856
Steel industry of 1908. 74
Steel making, Alloy used in. 1010
Steel making, Electric. 136
Steel making in the U. S. 614
Steel making, Schwab on. 709
Steel markets in 1908. 77
Steel, Nickel in, New direct method for determining. 912
Steel prices. 310, 315, 316, 461, 463, 513, 514
Steel process, Elec., Bismarckhütte. 1147
Steel producers, The two leading. 810
Steel-rail question, Present position. 758
Steel, United Kingdom. 1176
Steel, U. S., in 1908. 321, 333, 370, 530, 562, 614, 810, 1114, 1148
—Foreign Trade. 387, 1184
—U. S. Steel Corp. report. 659, 664, 903
Steel, Vanadium, in drills. *468
"Steels, Special, Steel-making Alloys and Graphite, Rapid Methods for Chemical Analysis of." †815
Steele, E. G. Vibromotor ore sizer. *493
Steele, John N. 376
Steifer, P. B., Mg. Co. 1207, 1256
Stemming, Note on. 462
Stenger, Ernest. 1058
"Step" process for iron ores. 168, *1129
Stephen, Geo. D. Suction gas. *1076
Stephens-Adamson conveyer, Copper Queen's. *542
Stephens Climax Imperial hammer drill. *657
Stephenson Bennett Consol. 110
Steptoe Valley Smelting Co. 915
Steptoe Valley works, Nev. 120, 185, 280, 1212
Steptoe smelter, Time recorder. *1240
Sterling Borax Co. 138
Sterrett, D. B. Amatrice. 1039
Stevenson, John, Death of. 621
Stewart, Edward. 821
Stewart, Wm. M., Death of. 913
Stock market, "Bull," Psychology. 1247
Stock market, Open-air, N. Y. *356
Stock, Mining, Proposed tax on. 34
Stocks, Mining, as investments. 1292
Stocker, J. Elmore process, Cobar. 177
Stockett, Lewis. 1206
Stockholders, Rights of, to information. 268, 264
Stoltz, G. C. Computing tonnage. *350
—Reclaiming inclined hoistway at Mine 21. *600
Stone, C. A. Mining and milling Fla. phosphates. *490, 667
Stone, C. J. Precipitation of copper from Butte mine water. *953
Stone, Calif., in 1908. 121
Stone Cañon coal mines, Calif. 325, 889
Stone-cutting process, Neukirch-Freytag. *1236
Stone, New York. 1273, 1274
Stonestreet, G. D. Mines as investments. 1193
Stope-drill competitions, etc., Transvaal. 132, 408, 495, *549, 623, *658, 869, *895, 998, *1090
Storage batteries at Gary. 22
Storms, W. H. Yellow Aster mine. *1277
Stoughton, Bradley. 818
Stow, A. H. Coal dust explosive? 17
Strang, John, Death of. 1058
Strap, Jules. 792
Stratton Estate, American Eagle. 1060
Stratton's Independence. 105, 179, 180, 379, 820, 1106, 1254
Strike. See "Labor," proper names, etc.
Strout, Fred McL. 1058
Struthers, Joseph. 376
Stuckenberg, W. D. 228
Sturtevant centrifugal multivane fan. 757

PAGE

Sturtevant ring roll mill. 855
Suction gas and application to mining. *1076
Sulitelma mine, Elmore process. 1276
Sullivan overwinding safeguards. 1150
Sully, J. M., and new process. 1054, 1212, 1245
Sulman's zinc-extraction process improved. 791
Sulphide Corp. 124
Sulphur action in gas coal. 897
Sulphur and zinc in Mexico. 1012, 128
Sulphur, Italian situation. 831
Sulphur, New Hebrides. 958
Sulphur, U. S. foreign trade. 336
Sulphur, Wyo., in 1908. 112
Sulphuric-acid plant, Tenn. Cop. Co.'s. 309
Sulzer centrifugal pump. *404
Sumatra, Auriferous and stanniferous tourmaline. 1003
Summerland, Calif., Petroleum. *34, 814
Sump for filling skip. *1282
Sun spots and explosions. 427
Sunday tunnel, Colo. 429, 970
Sunnyside coal mine explosion. 715, 762, 871
Sunnyside mine, Utah. *193, *243
Superheated steam for winding engines. 467
Superior & Pittsburg report. 817, 916
Superior coal mine, Ind. 964
Superior mine, Mich. *62, 279, 329, 381, 577
Support, Roof, Keighley's. 280
Surface rights of entrymen. 517
Survey, Balloon. *1079
Survey, Geological.
—Accidents, explosives, experimental stations, etc. 29, 81, 196, 212, 446, 558, 762, 823, 951
—Appropriations. 519, 619
—Bogus experts and the Survey. 216
—Building, Proposed. 315
—Buildings, Statistics of. 1144
—Coalfields—Map and tables. *160
—Denver office. 892
—Explosives, Permissible. 1190
—Fires. 1005, 1008
—Fuel tests. 212, 611, †815, 960
—Pricing public coal lands. 1137
—Work in 1908. 211, 221
—Colo. St. Geol. Survey. 276, 652
—Massachusetts Geol. Survey. 398
—Missouri Geol. Survey. 1008
Survey, Mine, Law of. 597
Survey, Mineral-land, bill. 171, 226
Surveys, Refunds of payments for. 399
Surveying bore-hole, Apparatus. *854
Surveying methods, Granby Co.'s. *255
Surveying—Sighting underground. 1010
Surveying—Topographic engineering. 997
Surveying—Triangulation station. *1124
Susmann, J. H. 324, 376
Sutro tunnel, Nev. 626
Sutton, W. J. 1300
Sutton, Steele & Steele Vibromotor. *493, 821
Swank, James M. 178
Swansea Extension, Utah. 1065
Sweden, Elmore process in. 1275, 1276
Sweden, Iron. 1098
Sweden and Norway, Copper. 681, 907
Sweden, Norway, Electric smelting. 379, 963, 1050
Sweden, New Grondal plant. 909
Sweeney, Charles. 178
Swinburne, U. P. Iron, Transvaal. 788
Swisshelm Devel. Co., Ariz. 575, 822
Switch, Auto., for inclines. *952
Sylvanite Consol. Mg. Co. 42
Sylvanite Queen Mg. Co. 431
Sylvanite Townsite & Devel. 431
Sylvanite, N. M. 108
Symmes, Whitman. 520

T

Tacoma Copper Co. 822
Tadmor mill, Rawhide, Nev. *347
Tahoe National Forest. 670, 717
Tailings, Density factor for. 640
Talbott, F. A. Oil extraction. *1001
Talc, New York. 1273, 1274
Tamarack, Mich. *60, 7[illegible], 1007, 1020
Tamping dynamite. 225, 612
Tamping shot holes in coal mines. 813
Tanganyika Concessions, Ltd. 38, 407, 796
Tanks, Continuous-agitation, El Oro. *683
Tantalum ore, Market for. 965
Taquah mine, West Af. 196, 427
Tariff, Canadian, on coal. 523, 811, 1309
Tariff, Coal—Refunds of duties. 373
Tariff—Drawbacks on metals. 261, 302
Tariff question, Present status. 809
Tariff revision. 30, 164, 227, 609, 615, 617, 622, 661, 662, 665, 670, 709, 768, 809, 772, 777, 1106, 1309
Tariff, Zinc-ore—Proposed. 567, 30, 164, 227, 615, 661, 662, 665, 809, 772, 1053, 1312
—Judicial decision. 268, 272, 461
Tarr, R. P. Coal, Wash., in 1908. 89
Tasmania. See also "Australasia."
Tasmania Gold Mg. Co. report. 1033
Tasmania in 1908—Notes. 1012, 1046
Tasmania land administration. 1048, 1133
Tasmania ore-treatment projects. 1049
Tasmania production, third quarter. 262, 363
Tasmania, Tin. 125, 423, 468
Tasmanian Smelting Co. 124
Tate and Stone "Foundry Practice." †374
Tate river alluvial workings. 1093
Tax laws, Petroleum, Tex. 95
Tax on mining stock, Proposed. 34
Tax, Penn., for accident fund. 220
Taxation, Bullion, Nevada. 275
Taxation, Mine, Montana. 59
Taxation of mining lands, Canada. 571
Taxes paid on iron mines. 743
Taxing unmined coal, Penn. 776
Taylor & Brunton Ore Sampling Co., etc. 272, 420, 516, 862
Taylor, Edgar. 858
Taylor, E. H. Silver determination. 543
Taylor, Edward H. 228
Taylor, Frank, Death of. 178
Taylor Fdy. & Eng. Co. *397, *440
Taylor, H. P. & Co. Lake freights. 959
Taylor, James. 621
—Explosions and their causes 1191
Taylor, John, & Sons. 1293
Taylor, Rex 1104
Teams, Big String, Freighting ore with. 1078
Tecoletes mines, Mex. 236
Telemarken mine, Norway. 1276
Telephone test for firedamp. 566
Tellurium, Behavior in assaying. 1176
Tellurium, N. C. 297
Temiskaming mine, Ont. 134, 676, 724, 778, 974, 1269
Temiskaming & Hudson Bay. 384, 1255, 1260, 1269, 1302
Temiskaming & N. Ont. Ry. 432
Temperature, Bendigo mines. 348, 560
Templeman, Hon. Wm. 274, 424
Tench, S. V. 424
Tennessee, Barytes, in 1908. 137
Tennessee, Coal and coke. 91, 162
Tennessee, C., I. & R. R. Co. merger, etc. 78, 189, 517, 530, 609, 659, 860
Tennessee Cop. Co. 216, 505, 777, 873, 886, 1011
—Year 1908; shoveling; smelting; acid. 309
Tennessee, East, Zinc-mining dist. *401
Tennessee, Gold, in 1908. 53
Tennessee, Iron, in 1908. 321
Tennessee, Petroleum. 92
Tennessee, Phosphate, in 1908. 139
Tennessee, Silver, in 1908. 54
Tennessee Steel Co. 320
Tennessee, Zinc ore, in 1908. 465
Terminating life of company with mine. 1291
Terre Haute safety-device station. 762, 823
Terrible mine, Indé, Mex. *697
Terry, Tench & Proctor tunneling machine. *1296
Testasecca mine, Sicily. 349
Testing machines, Emery, Proposed. 366, 909
Testing placer ground. 223
Texada island, B. C. 888
Texas-Almaden Co. 141
Texas, Coal. 91, 110, 162
Texas, Gold, in 1908. 53
Texas iron-ore deposits. 478
Texas mining in 1908. 110
Texas Oil Co. 96
Texas, Petroleum. 92, 94. 234
Texas, Quicksilver, in 1908. 110
Texas, Silver, in 1908. 54
Thayer, B. B. 1252
Thomas, Alex., Death of. 228
Thomas, D. C. 866
Thomas, D. G. Windy shots. 467
Thomas, W. A. Electric power in coal mines. 510
Thompson, J. V. 722
Thomson, A. A. 274
Thorogummite. 257
Threlkeld mines, Eng., Gas plant. *1076
Thury's electrical work. 862
Tia Juana group, Ariz. 104
Tiger-Poorman mine, Idaho. *115, 1063
Tigre mine, Sonora, Mex. 580, 826, 1066, 1214
Tilden, E. G. Burning wood under boilers. *499
Timber, Bleeding. 461
Timber, Concrete, and forest preservation. 421
Timber consumed at Cananea. 1205
Timber cutting, Law of. 639
Timber, Government, lawsuit. 179
Timber—Keighley's roof support. 280
Timber, Preserving, Open-tank method. 840
Timber setting, Inclined shafts. *656
Timber, Treating. 222
Timbers, Round, framing, Queensland. *604
Timbering methods, Mt. Morgan. *638, *747
Timbering notes. 215, 264, 314, 367, 462, 639
Time recorder for furnace operations. *1240
Timiskaming. See "Temiskaming."
Tin, Alaska. 101, 1041
Tin and antimony determination. 850
Tin and ore in 1908. 72, 1095, 1274
—U. S. foreign trade. 336
Tin, Australasia. 125, 423, 468, 902, 1280
—Discovery, Pine creek. 911, 1272
Tin, Bolivian ore, arrivals. 240
Tin deposits of the Carolinas. 1139
Tin discovery, South Africa. 807
Tin, Gt. Brit., 1908. 72, 241
Tin, Malay, in 1908. 72, 335
Tin market, London, in 1908. 207
Tin market, N. Y., in 1908. 73. *74
Tin, Mex., in 1908. 127
Tin mining and milling, North Queensland. 1092
Tin-ore dressing, South Crofty. 651, 1017
Tin, Pacific coast arrivals. 335
Tin plates—Historical note. 1145
Tin, Queensland. 125, 652, 1280
Tin, Sumatra. 1003
Tin, Tex., in 1908. 110
Tin—Utilizing detinning products. 1145
Tin—West. Australia State mills. 218
Tintic Co. 973
Tintic Development Co. 479
Tintic Empire Co. 718
Tintic Humboldt Mg. Co. 1302
Tintic Mines Co. 1066, 1259
Tintic Smelting Co. 115, 276
Tinton mine, S. D. 42, 722
Tipple of Davis Colliery Co. *1289
Tiro General mill, Mex. *495, 821
Titanium and its minerals. 10
Titanium—Rutile notes. 745, 1010
Tomboy Gold Mines, Ltd. 620, 1211
Ton of iron—Net or gross? 1083, 1192
Tonnage, Computing, from ore volume removed. *350
Tonnage estimation, dumps, cuts, etc. *640, 1011
Tonopah, Nev., Mines and mills. *594
Tonopah-Belmont, Nev. 234, 280, 330, 382, 478, 578, *594, 964, 1307
Tonopah Mg. Co. 41, 118, 120, 280, 331, 478, *594, 919, 972, 1110, 1212, 1307
—Report. 986
Tonopah Extension, Nev. 377, 526, 578, *594, 919
Tonopah production in 1908. 120
Top Development Co. 1307
Topaz, Brazilian mining. 1234
Topographic engineering. 997
Torbernite. 258
Tornebohn on iron-ore reserves. 812
Toronto University. 855
Torreon Smelting Works, Mex. 282
Tourmaline, Auriferous and stanniferous, in Sumatra. 1003
Tourmaline, Brazilian mining. 1234
Tourmaline, Maine. 1127
Townsend, A. R. Nat'l Eng. School, Mex. 256
Traag mine, Norway. 1276
Tracks, Mine—Notes. 224
Traer, G. W. Conservation, coal industry. 509
Tramp Consol., Nev. 1212, 1307
Tramway, Aërial, Balaklala's. *501
Tramway, Aërial, Pyrenees. *1119
Tramway, Aërial, W. Va., colliery. 762
Transportation by U. S. Steel Corp. *739
Transvaal, Coal. 523, 828
Transvaal, Copper. 752
Transvaal, Diamonds. 523
See also "Diamond."
Transvaal, Gold. 22, 53, 129, 174, 312, 326, 523
—Monthly statistics. 22, 450, 662
Transvaal, Gold distribution. 990, 1293
Transvaal, Gold mining in—Report. 835, 869
Transvaal labor, Chinese and negro. 463
Transvaal labor notes. 130, 132, 312
Transvaal, Mine labor and accidents. 562
Transvaal mines, Amalgamation of. 398, 619
Transvaal mining commission. 132
Transvaal mining in 1908. 129, 523, 559
Transvaal mining notes. 319, 326, 361, 562, 611, 623, 719, 752, 788, 817, 855, 883, 1283
Transvaal mining reports and life of mines. 31
Transvaal stope-drill competitions. 132, 318, 408, 495, *549, 623, 644, 658, 869, *895, 998, *1090
Traphagen, F. W. Smelter smoke. 1200
Treadwell mine, Alaska. 100, 720
Treager Coal Mg. Co. 1063
Treasury Dep't's money estimate. 272
Trenton, Mont. 59, *106, 1251
Tres Hermanas district. 889
Trethewey, mine, Ont. 282, 527, 1269
Trevor, J. Multi-cipher device. *560
Tri-Bullion Sm. & Devel. Co. 578
Triangulation station. *1124
Trilby Gold Mg. Co. 180, 673
Trimountain. See "Copper Range."
Trinity Bonanza King Co. 179
Trinity River Mg. Co. 771
Truitt lease, Rawhide, Nev. 184
Try-square for timber setting. *656
Tube-mill discharge, El Oro. *688
Tube mill, Fraser & Chalmers. 1107
Tube-mill liner, El Oro. *687
Tulare Mg. Co. 292
Tungsten and its minerals. 203, 813
Tungsten and vanadium. 813
Tungsten, Australasia. 125, 1092
Tungsten, Calif. 428, 672
Tungsten, Colo. 105, 1015
Tungsten industry, Boulder co., Colo. *1055
Tungsten, India. 99, 855
Tungsten, Nelson, B. C. 479
Tungsten, Nev., in 1908. 121
Tungsten, Nova Scotia discovery. 858
Tungsten, Tariff on. 1106
Tungsten, U. S., in 1908. 1095

PAGE
Tungstic-acid determination in low-grade ores. 1141
Tunis, Mining in. 475
Tunnel-boring machine, Practical test. *1296
Tunnel-boring machines, Rotary. 1106
Tunnel, Deep drainage, Cripple creek. 328, 914, 1106, 1254
Tunneling machine, Karns. 297
Tuolumne mine, Mont. *106, 349, 721, 1301
Turbine, Curtis, power tests, etc. *794
Turbine, Steam—Rubber foundation. 415
Turbine, Allis-Chalmers, D., L. & W.'s. *508
Turbo-classifier, Blanc. *500
Turbo-compressors, Freytag on. 698
Turf mines, South Africa. 215, 644, 1154
Turkestan Coal Mg. & Met. Co. 896
Turkey, Copper. 681, 907
Turkey, Mining conditions. 564
Turner, H. W. Quicksilver. 141
Turquoise mining dist., Ariz. 213, 372, 59
Two Queens mines, Ariz. 1304
Tyee Cop. Co. 250, 874, 1213
Tyee Cop. Co.—Matte-separating fore-hearth. *1232
Tyee-Swayne Cop. Mines, Ltd. 874
Tyrrell, J. B. 36, 228, 324, 572
Tyssowski, J. Goldfield and Goldfield district, Nev. *1229
—Tunnel-boring machine, Practical test. *1296

U

Uinta Co., Colo. 718
Uintah Treasure Hill. 325
Ultimate consumer, The. 860
Uncle Sam Consol. 276, 383, 920
Undercurrents, Placing of. *25
Union Connellsville Coke Co. 280
Union Leasing Co., Colo. 1019
Union Minière Co. 407
United Coal Co. 280
United Collieries Co. 427
United Kingdom.
—Accidents. 90, 367, 965, 1017, 994
—Coal, coke, briquets. 284, 678, 711, 1244, 1303
—Coal mining with machines. 649, *797, 1006, 1042, 1052
Welsh miners object. 897
—Coal-dust question. *1084, 1196, 1290
—Colliery winding, Electric, etc. 898, *904
—Copper production. 907
—Copper market, London. *57, 58, *73, 165
—Copper ore in 1907. 62
—Foreign trade, Metals. 241, 365
—Gold and silver, commercial movement. 54, 190, 286, 646, 990, 1293
—Hoisting speed in collieries. 224
—Iron and steel. 77, 977, 1098, 1176
—Iron furnaces in blast. 896
—Iron, Scotch, 1908. 239
—Iron trade. 222, 285
—Iron pyrites, 1907. 122
—Kent coalfield. 910
—Lead market, London. *57, 63, 167
—London's Kafir boom. 1283
—Metal prices, London, 24 years. *57
—Mexican malacate, in England. *1033
—Mineral production—Stone, clay, iron pyrites, oil shale, barium, etc. 711
—Mint coinage, etc. 285, 990, 1293
—Patents, New. 273, 470, 668, 865, 1102, 1299
—Radium in England. 500, 1293
—Silver market, London, in 1908. 217
—Spelter in 1908. 265, 241
—Spelter market, London. *69, *73, 209
—Tin in 1908. 72, 241
—Tin market, London. 207
United Mine Workers of America. 226, 365, 405, 414, 423, 427, 513, 558, 579, 615, 623, 627, 710, 715, 762, 811, 868, *849, 966, 1111, 1153
United Rico Mines. 718
United Smelters, Ry. & Cop. Co. 431, 723, 772, 1021
United States.
The following references are chiefly to productions in 1908. See also minerals, etc., by name.
—Alundum. 1033, 1095
—Ammonia, ammonium sulphate. 82, 1051, 1095, 1241
—Antimony and ore. 62, *74, 121, 336, 1095, 1147
—Arsenious-acid, arsenic. 1090, 1095
—Borax. 137
—Bromine. 1000, 1095
—Cadmium. 99, 1095, 1141
—Cement in 1908. 213, 996
—Chemicals, Foreign trade. 336
—Coal. 51, 83, 91, 1095, 1226
—Coal and coke, Foreign trade. 333, 530
—Coalfields, with map and statistical tables. *160
—Coke. 51, 83, 91, 1095
—Copper. 51, 56, 681, 764, 907, 1095
—Copper imports and exports. 336, 365
—Copper consumption. 416
—Copper sulphate. 51, 388, 1095
—Foreign Trade, 1908. 240, 333, 336, 365, 387, 388, 1197, 1291
—Garnet. 81, 82, 988, 1095
—Geol. Survey map work. 211, 221
—Gold and silver, Commercial movement. 54, 239, 286, 388, 646
—Gold imports from U. K. 990
—Gold. 51, 53, 1095
—Iron-ore reserves. 812
—Iron, steel, ore, in 1908. 51, *74, 321, 333, 370, 418, 530, 562, 614, 810, 1095, 1098, 1114, 1148, 1192
—Iron, steel, ore, Foreign trade. 387, 1184
—Iron, Pig, classification. 1095
—Iron-ore shipments, Lake. 45, 48, 75, 606, 610
—Iron making—Raw material. 808
—Iron-ore reserves. 812
—Iron, etc., scrap consumption. 911
—Lead. 51, *63, 763, 1095
—Lead consumption in 1908. 1291
—Lead, White, etc. 51, 64, 82, 1095, 1201
—Limestone. 51, 76, 1095
—Magnesite, magnesium. 82, 138, 1095, 1184, 1247
—Metals, Foreign trade. 336
—Mineral and metal production, 1908. 51
—"Mineral Resources." †618
—Mining in 1908. *100
—Money, Jan. 1, Treasury estimate. 272
—Petroleum. 51, 92, 1095
—Philippine coinage. 498, 546
—Platinum. 55, 506, 1095
—Precious metals used in arts. 499
—Production of ores, metals, minerals, chemicals, 1908, collected for MINERAL INDUSTRY. 1095
—Pyrites. 82, 216
—Quicksilver. 51, 141, 1095
—Silver. 51, 53, 54, 239, 286, 1095, 1150
—Sodium. 910, 1095
—Tin and ore. 72, 1095, 1274
—Zinc, ore, and spelter. 51, *63, 67, 68, 69, 265, 368, 465, 1095, 1247
Spelter consumption. 1197
—Zinc white, etc. 51, 69, 82, 1095
United States Agricultural Corp. 873
United States Gold Corp. 1062
United States Red. & Ref. Co. 426, 917
United States Sm., Ref. & Mg. Co. 63, *262, 325, 425, 573, 873, 1060, 1106, 1210
United States Steel Corp. 74, 87, 320, 458, 517, 530, 609, 610, 715, 860, 877, 923, 968, 1193
—Utilizing furnace gases, Gary. 20
—Preliminary statement. 264, 316, 322
—Report for year. 659, 664, 903
—Prices. 310, 315, 316, 461, 463
—Labor efficiency and the Corp. 709
—Cost of pig from Lake ores. *739
—Gt. Northern ore properties. 918
—Ore-handling bridge, Duquesne. *944
—Stock listed in Paris. 1292
United Verde, Ariz. 59
—History. 560
University development, New plan. 553
Ural coal production. 212
Uranium and its minerals. 257
Uranium, Colo. 106
Uranium, Volumetric determination. 155
Usher sand process. 1142
Utah-Bingham. 235
Utah, Coal and coke. 91, 162, 1254
Utah Consol. 113, 717, 873, 915, 968
Utah, Copper. 56, *113, 907
Utah Cop. Co. 113, *114, 235, 276, 383, 366, 426, 522, 771, 868, 859, 915, 968, 1308
—Statements. 423, *1185
—Screening at the mill. 992
—Operations during 1908; map. *1185
Utah Fuel Co. *193, *243, 417, 617, 771
Utah, Gold, in 1908. 53, *113
Utah Gold & Cop. Mines Co. 281, 777, 972, 1065
Utah laws. *194, *245, 715
Utah Mine Co., Fish Springs. 383
Utah Mine Operators' Asso. 622
Utah Mines Coalition Co. 785
Utah mining in 1908. 113
Utah, Oilfield, New. *989
Utah, Silver, in 1908. 54, *113
Utah Stock & Mg. Exchange. 868, 1107
Utah, Zinc and lead. 465, 763
Utica Mg. Co. 1247

V

Vadose ore deposition, Locus of. 857
Valentine Bros.' tramway, Pyrenees. *1119
Valley zinc mine, Tenn. *401, 403
Van Brussel, J. B. 3000-h.p. winding engine. *904
—Largest coke-oven gas-engine plant. *1189
Van Dyk mine, Transvaal. 130, 495, 623, 642
Van Dyke, John H., Death of. 669
Van Osdel, E. B. Determination of tin and antimony. 850
Van Zwaluenburg, A. Machine sampling. 420
Vanadium and iron alloys, Laboratory methods for making. *1035
Vanadium Alloys Co. 106
Vanadium and its minerals. 518, 813
Vanadium in Peru. 996
Vanadium steel in drills. *468
Vanadium, U. S. production. 1280
Vanadium, Volumetric determination. 155
Vancil, H. C. 572
Vancouver mine, B. C. 250
Vandalia Coal Co. 326, 379, 525, 673, 1063, 1153
Vanderlip, Washington B. 1014
Veatch, A. C. Efficiency in public-land administration—Tasmania. 1048
—Australasian mineral leasing. 1133
Vein formation, Nicaragua, Features of. *1130
Vekal mines, Ariz. 104
Ventilating notes. 11, 171, 197, 213, 266, 314, 415, 566, 663, 906, 1006, 1052, 1096, 1244, 1290
Ventilation and explosions, Views on. 12
Ventilation, Coal-mine, Data on. 757
Ventilation, Mine, High currents in. 14
Ventilation of mines. 31
Ventilation—Quality rather than quantity. 15
Venus group, N. M. 890
Verde mine, Ariz. 560
Vermilion range in 1908. 610, 711
Vermont and N. H. in 1908. 112, 53, 318
Vermont Copper Co. 112
Verona Mining Co. 759
Vibromotor, Sutton, Steele & Steele. *493
Victor lease, Rawhide, Nev. 184, 382
Victor mine, Colo. 576, 967
Victoria. See also "Australasia."
Victoria, Australia, notes. 5,11,19,99,639,646
Victoria Quartz mine, etc. 323, 348, 560
Victoria, Dredge mining and hydraulic sluicing. 269
Victoria Falls Power Co. 523
Victoria, Mich. *62, 673, 775, 1007
Victoria mine, S. D. 42
Victoria Extension, S. D. 42
Victoria shaft, Granby Co.'s. *254
Viel chromium patent. 767
Village Deep. 261, 644, 883
Village Main Reef. 132
Villemagne company. 671
Villiaume, Comm. French Guinea gold. 400
Vindicator Consol., Colo. 326, 379, 381, 718, 867
Vinnie mine, Colo. 625
Virgin, J. Coal-dust explosions. 12
Virgin coalfield, Development. 510
Virginia, Coal and coke. 91, 162, 1247
Virginia, Gold, in 1908. 53
Virginia, Iron and ore. 321, 1247
Virginia manganese deposits, etc. 1056, 1247
Virginia & Mex. cyanide plant. *170, 696
Virginia, Mineral production. 1247
Virginia Pig Iron Asso. 284
Virginian Railway. 764, 908, 1054, 1094
Viscosity, Effect of, on settling. 843
Vivian, Capt. Johnson, Death. 1300
Vlottmann drill. 549, 869, 998, *1091
Vogeltruis Consol. Deep. 495
Voit, F. W. Kimberlite rock and origin of diamonds. 789
Voorspoed diamond mine. 850
Vulcan Detinning Co. 830
Vulcan iron deposit, Calif. *785
Vulcan mine, Queensland. 125
Vulture Mines Co., Ariz. 1256

W

W. C. High currents in mine ventilation. 14
W. H. P. mine, Colo. 820, 823, 967
Wade, W. R. Gem-bearing pegmatites, Western Maine. 1127
Wadleigh, F. R. 324
Wage adjustments, Iron industry, 1908. 80
Wage payments, Weekly, Ind. 574
Wage question, Broken Hill. 1226, 1246, 816
Wages. See also "Labor."
Wages and coal-mining cost. 948, 1099
Wages, Montana coal mines. *849
Wages, Recovery of, Alberta. 427
Wagner group, B. C. 676
Wahl, Wm. H., Death of. 716
Waihi mine, N. Z. 123, 764
Wakefield Iron Co. 479
Walch, E. Three French gold mines. *792
Waldorf Consol Mg. Co. 1060, 1156
Walker, Arthur L. 1252
Walker, Elton W. 228, 520
Walker, S. F. Electric shocks and fires 317
—Electrically driven pumps. 422, 766
—Rope driving. 450
—Superheated steam. 467
—Electrical shot firing. 417
—Direct vs. alt. current. 862
—Comparison of coal-cutting machines. 1042
—Electric mine signaling. *1248
Wallace M., M. & R. Co. 278
Wallaroo & Moonta costs, etc. 124, 814
Walsh, James P. 866
Walsh & Seibert coal lands. 1193
Wanderer mine, Rhodesia. 259
Ward shaft, Nev. *806
Warden, Bruce R. 770
Wardner, W. H. 966
Wardner, W. R. Glory-hole mining, De Lamar, Nev. *451
Warnings of atmospheric conditions. 566
Warren, N. H., zinc-ore smelting. 1009
Warren Realty & Devel. Co. 791

PAGE

Wash houses for coal miners. 801
Washer for low-grade gold ores. *935
Washery, Consol. Coal Co.'s. *993
Washing Florida phosphates, etc. *490, 667
Washing plant, Coal, Belt mine. *590
Washington, Coal and coke. 89, 91, 162, 529, 725
Washington, Gold, in 1908. 53
Washington, Henry S. 376, 963
Washington, Silver, in 1908. 54
Washington mining-safety laws. 176
Washoe Cop. Co. 106, 846, 1258, 1251
Washoe smelter. 430
—Picture. *215
—Smoke question. 265, 418, 474, 562, 885, 914, 960, 971, 1200
—Electric motors at concentrator. 643
Wassau mines, Africa. 38, 197, 427
Watchmen, Electric recorder for. *454
Water and steam-turbine power tests. *794
Water—Approaching old workings. 220, 762
Water, Butte, Copper precipitation. *953
Water gages, Table of. 1139
Water in pipes—Formulas. 1241
Water losses at Broken Hill. 851, 860
Water, Mine, Hoisting. *1281
Water, Old copper-mine—Note. 258
Water power in U. S. 1010
Water rights, Law of. 639
Watering coal dust. See "Coal dust."
Waterloo placer case. 406
Watery ground, Sinking in, with concrete. *653
Watson, C. 966
Watson, T. L. Mineral production, Va. 1247
Watt mill, Rawhide, Nev. *347
Watteyne, V. Belgian accidents. †1013, 1290
Waugh drill. 999, *1090
Wax production, Standard Oil. 1010
Way, Karl M. 1206
Wayne Iron & Lumber Co. 477
Wayside mine, Wash. 920
Webber, Morton. 1300
Weeks, F. B. Phosphate lands. 505
Weeks, F. D., roasting furnace. *1140
Weeks, Harry W. 228
Weeks, W. S. Balloon survey. *1079
Weidman, S. Lake Sup. iron ore. 767
Weighing gold and silver. 469
Weight of material, Estimating. *640, 1011
Weiss, H. F. Open-tank method of preserving timber. 840
Welch, H. K. Montana mining. *106
Weldon Gold & Cop. Co. 103
Wellington Colliery Co. 250, 479
Wellington Colliery Co.'s Ext. mines. 628
Wellington Mines Co. 524
Wells, J. L. Lordsburg dist. 890
Welsh coal miners object to machines. 897
Wernher-Beit mines. 523
Wertz, G. W. 178
West, A. Air economy, rock drills. *895
West Africa, Bitumen and oils. 1037
West Africa, French Gold. 400, 1094
West Africa, Gold Coast Colony and Ashanti in 1908. 53, 196, 355
—Notes. 34, 38, 199, 427, 565, 1061
West African gold mine, A. 1005
West African goldfield. 905
West Canadian Collieries Co. 580
West Coast Mines Co. 235, 626, 1307
West Coast Portland Cement Co. 920
West, E. I. 1111
West, H. E. 818
—Impressions of Gowganda. 900, 1050
—Vein formation in Nicaragua. *1130
—Panel system in metal mining. *1177
West Kendall Gold Mg. Co. 1258
West Quincy, Utah. 717
West Rand Consol. Co. 180, 756, 817
West Stanley mine explosion. 419, 505
West Va. accidents. 12
West Va., Central, Coal mining in *1284
West Va., Coal and coke. 89, 90, 91, 162, 509, 529
West Va. Coal Mg. Inst. 1014, *1284
West Va. coal railroads. 1138, 1161
West Va., Iron in 1908. 321
West Va., Petroleum. 92, 99
West Virginia-Wyoming Co. 111
Western Asso. Tech. Chem. & Met. 572, 1306
Western Australia. See also "Australasia," "Australia."
Western Australia, Dividends. 711
Western Australia, Gold, full year. 423
Western Carbonic Acid Gas Co. 377
Western Fuel Co., B. C. 250, 479
Western Lead Ore Producers' Asso. 772
Western Maryland Co. *1285
Western Mg. Co. 105, 574
Western Mg. & Supply Co. 622
Western Ore Purchasing Co. 229, 377
Western Penn. mining methods, operator's standpoint. 511
Western Petroleum Co., Colo. 1208
Westervelt, Edward C. 376
Westfalia drill. 869, 998, *1091
Westinghouse air-pumping outfit. *646
Westinghouse converter-equalizer. *444
Westinghouse gas engines, Gary. 20
Weston, Eustace M. 274
—Ways of improving piston and hammer drills. *549
PAGE
—Stephens Climax Imperial hammer drill. *657
—Surface trials, Stope drills, Rand. 998, *1090
Westphalia, Model coal mine. *1135
Westport-Stockton colliery, N. Z. *753
Wethey, A. H. Zinc mining, Butte. 912
Wettlaufer mine, Ont. 214, 1260
Wext's tests of rescue appliances. 1192
Wharton, Joseph. 36
—Death. 171, 174
Wheel, Mine-car, Improved type. 1180
Wheeler, H. A. S. E. Mo. lead dist. 65
Wherry, H. P. 274
Whitaker, DeBerniere. 572
White, A. H. Lime in cement. 506
White, Byron N., Co. 480
White, E. E. Cost of diamond drilling for coal, Penn. 649
White, F. G. Gold and other minerals, Eastern Siberia. 1034
White, I. C. Barren zone, northern Appalachian field. 509
White lead, U. S. 51, 64, 82
White Pass & Yukon Ry. 1260
White Silver mine, Ont. 236
White, W. F. Working two coal seams in proximity. *756
White & Wilson Coal Mg. Co. 429
Whitewater; Whitewater Deep. 248, 249, 250, 281
"Who's Who in Mining and Met." †374
Whyel, George. 966
Wierum, H. S. 274
Wihuja lease, Nev. 185, 330
Wilbraham, A. G. B. 228
Wildman-Mahoney mines, Calif. 967
Wilkinson, H. L. 858
Wilkinson, W. F. Transvaal. 129
—West Af., Gold Coast, Ashanti. 196
—Rhodesia in 1908. 259
—Working costs on Rand. 559
Willcox' brine-evaporating tests. 1150
Williamette Pulp & Paper Co. 139
Williams, D. V. A., Death. 1300
Williams, G. W. Cobar field. 177
—Mining industry, Queensland. *603
—Mt. Morgan gold and cop. mine. *635
—Mt. Morgan metallurgical wks. *802
—Concentrating difficult lead ores, Broken Hill. 939
—Tin mining and milling, North Queensland. 1092
—Copper mines, Chillagoe dist. *1125
Williams, J. E. Tamping shot holes. *813
Williams, J. S., Jr. 1151
Williams, John T., & Son. 137
Williams, R. Y. 324
Williams-Luman mine, Wyo. 111
Wilmot, H. C. 1252
Wilmoth, L. J. Assaying stamp-mill by-products. 947
Wilson, A. R. 1014
Wilson, D. G. 1206
Wilson, J. B. Mt. Morgan mine. *746
—Treatment of the ores. 838
Winchell, N. H. and A. N. Optical Minerology." †1013
Windfall mine, Nev. 185, 824
Winding. See "Hoisting," "Rope," etc.
Windy shots in coal mines. 467
Wingfield, George. 473, 622, 821, 824, 1208
Winona mine, Mich. *62, 233, 477, 673, 1064
Winter Quarters mines, Utah. 193, *245
Wisconsin, Lead, in 1908. 763
Wisconsin, University of. 913
Wisconsin, Zinc. 72, 465, 1050
Wisconsin Zinc Co. 973, 1308
Wisconsin zinc dist., Mining laws and lease system. 861
Wish Bone mill, Colo. 328
Witherbee, Sherman & Co. *350
Witherell, Chas. S. 1151
Witt crude-oil burner. *889
Wolcott, G. E. Mining and milling, Rawhide. *345
—Mining and milling, Grass Val. and Nevada Cy. *396, *439
—Mines and mills, Tonopah. *594
Wolf-Bohres electric lamp. 898
Wolfram camp, Queensland. 1093
Wolframite, Description of. 203, 813
Wolframite, India. 99
Wolverine, Mich. *60, 279, 1157
Wolverine & Arizona. 1018
Wonder dist., Nev., Ore formation. *289
Wonderite clay. 1107
Wood burning under boilers. *499
Wood, Gardner C., Death of. 572
Wood mine, N. M. 42, 185
Wood preserving, Open-tank method. 840
Wood River dist., Idaho. 117
Woodbridge, D. E. Patenting mining claims. 1146
Woodbridge, T. R. Sampling by machine. *269, 420, 516, 862
Woodford, W. R. 716
Woodman, J. E. 572
Wooten Fuel Co. 725
Worcester, S. A. Milling, Cripple Creek. 956
—Elec. hoisting and pumping, Cripple Creek. 1057
York M. & M. Co. 823, 867, 871
Working costs on Rand. 559
PAGE
World productions. See countries, metals, etc.
Wright, Carroll D., Death of. 464, 472
Wright, F. E. and C. W. Alaska report. †35
Wright, Louis A. 1252
Wyandot mine, Mich. *62, 233, 329
Wyoming, Coal. 89, 91, 111, 162, 163
"Wyoming, Coalfields of." †1149
Wyoming, Copper. 56, 111, 907
Wyoming, Gold. 53, 111
Wyoming mining in 1908. 111
Wyoming, Petroleum and gas. 92, 112
Wyoming Sulphur Co. 112

Y

Yaeger, A. J. Alamos and Arteaga dists. 963
Yak Tunnel, Colo. 182, 276, 278, 477, 673, 774, 868, 1015, 1211
Yale, C. G. Calif. oil. 517
Yale Mining Co. 527
Yampa mine, and smelter, Utah. *115, 627, 973
Yankee Consol., Utah. 331
Yaqui peace, The. 363
Yates, Arthur G., Death of. 424
Yeatman, Pope. 1104
Yellow Aster mine, Calif., Geology of. *1277
Yonge, A. M. 1014
Youghiogheny & O. Coal Co. 722
Young, G. J. Lowering pump into mine. *806
Youngstown Sheet & Tube Co. *944
Youtz, L. A. Antimony determination. 497
Yuill, H. H. 571
Yukon Basin Gold Dredging Co. 1022
Yukon, Discoveries in. 1066
Yukon, Dredging in. *833
Yukon, Gold. 135, 200, 620, 974
Yukon Gold Co. 315, 319, 357, 366, 1159, 1260
Yukon Territory, Mining in. 620
Yuspensky mine, Siberia. 1179

Z

Zacatecas dist. and its relation to Guanajuato and other camps; geolog. map. *1227
Zalinski, E. R. Amatrice. *1038
Zambona mine, Mex. 699, *700, 963
Zeehan, Tasmania, smelter. 1046
Zillmanton mine, Queensland. 603
Zinc. See also "Spelter."
Zinc, Algeria, Mining. 955
Zinc, Australasia. 68, 124
Zinc belt, Joplin, Migrations of. *1049
Zinc blendes, Okla., Analysis. 1148
Zinc, Brit. Col. 247, 250, 580, 888
Zinc, Broken Hill. 122
Zinc, Butte mining. 912
Zinc, Colo., in 1908. 69, 105, 465
Zinc Corp., Ltd. 219, 68, 124, 1275
—Report. 1205
Zinc dist., Wis.—Laws; leases. 861
Zinc, European convention. 68, 221, 368, 714, 436, 570
Zinc-extraction formulas. 1241
Zinc extraction from mixed ore. 666
Zinc extraction, New proposals for. 791
Zinc, Germany. 265, 633, 852
Zinc, Ill., in 1908. 69, 465
Zinc, Joplin dist., in 1908. 69, 465
Zinc, Kansas. 69, 71, 465
Zinc-lead dist., New, Okla. 496
Zinc—Locus of vadose ore. 857
Zinc, Mexican, and sulphur. 1012
Zinc, Mexican ore. 569, 432, 1010
Zinc, Mex., smelting proposed. 1303
Zinc-mining dist., East Tenn. *401
Zinc mill, Mex., Potter process. 724
Zinc, Missouri, in 1908. 69, 71, *73, 465
Zinc, Mont., in 1908. 108, 465, 912
Zinc, Nevada, in 1908. 120, 465
Zinc, New Jersey mining. 11, 465
Zinc, N. M., in 1908. 110, 465
Zinc, Oklahoma. 69, 70, 465
Zinc, Okla., near Ravia. 722
Zinc-ore and zinc tariff, Proposed. 567, 30, 164, 227, 615, 661, 662, 665, 809, 772, 1053, 1312
—Judicial decision. 268, 272, 461
Zinc ore, Margin on. 1053
Zinc-ore prices, in 1908 70, 71, 72, 73, 191
Zinc-ore smelting, Warren, N. H. 1009
Zinc retorts, Apparatus for charging. *1272
Zinc shavings, Drawback on. 302
Zinc smeltery, Iturbide, Mex. 1112
Zinc treatment, Broken Hill. 219
Zinc, U. S. and ore and spelter. 51, *63, 67, 68, 69, 265, 368, 465, 1095, 1247
—Foreign trade. 336, 1197
—Spelter consumption. 1197
Zinc, Wisconsin. 72, 465, 1050
Zinc oxide, U. S. 51, 69, 336, 1095
Zinc white prices in 1908. 82
Zinc salts prices in 1908. 82
Zinc W. A. H. Barium determination. 814
Zirconium and its minerals. 548
Zollern II colliery, Westphalia. *1135
Zook, J. A. Zinc and lead, Joplin dist. 69.